EDUCATION.

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STATE EDUCATION.

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The importance and value of education were never more fully recognized than they are to-day. In the old world, where monarchs reign, leading statesmen are coming to acknowledge the truth, that the best security of nations lies not so much in their armies and navies as in their schools. Of far greater importance and necessity is the school in a republic where the people are sovereign, and in an age when ideas, not passions, govern the people. As Montesquieu says: "It is in a republican government that the whole power of education is required."

Three leading questions at present engage the attention of thoughtful minds upon this subject: *First*, the *kind* of education demanded; *secondly*, the *extent* and *limit* to which education shall be carried; *thirdly*, by whose *support*, and under whose *supervision* shall education be secured? In this paper we shall confine our thoughts to the third question, viz.; by whose support and under whose supervision shall education be secured?

This may be called the battle-ground of the age. The question-Who shall occupy the teacher's chair? bids fair to outlast all other questions, because it is believed that the interests involved are deeper and more vital than all other interests. It may be stated here, that wise and good men are divided in opinion on this subject. Nor is it difficult to account for this diversity. The standpoint of observation is different. The statesman, viewing this question only as a statesman, realizing that the State is bound to preserve and protect its own existence and promote the general welfare, may naturally conclude

that so important an agency as the public school cannot, with safety to the State, be left to the voluntary support of private or ecclesiastic organizations. He may, therefore, affirm that the State alone is competent to direct and provide for the education of the people. On the other hand, the minister of the gospel, the churchman, whose energies are employed in building up the church, who is watching and guarding with extreme care every interest of the church,—recognizing the intimate relation between education and the ultimate success of Christianity,—he may very easily come to the conclusion that the church alone is competent, and of right ought, to control the education of the people. These classes cannot be both right. Nor is it probable that either view, though partial, is wholly wrong. The true policy doubtless lies somewhere between these two opinions. Two questions then present themselves for our consideration, *viz:*

First, Shall the State continue to exercise its right of self-protection in the education of children and youth, or shall it abandon that education to the care and support of ecclesiastical organizations whose dogmas may or may not be conducive to the independence and prosperity of the State, and whose educational institutions necessarily, in a new country, lack means, certainty, and universality?

Secondly, Shall the State system of schools, to whose support the plighted faith of the State and Nation has been given, receive the moral support of religious men, or shall they abandon this State system of schools to the care and guidance of the irreligious and give such moral support exclusively to the building and maintenance of denominational schools?

It will be perceived that the former question relates to the State in its organic capacity, the latter to a class of citizens within the State. It will also be observed that the former question is not in regard to the founding of a State system of schools. The State system of public education had its birth more than two centuries ago. In 1636 the General Court of Massachusetts "took the first governmental step to promote education in the New World," by donating four hundred pounds sterling toward the founding of Harvard College and so made the founding of it possible. In 1647 the same Court ordered in all the Puritan colonies, in every township containing one hundred families, the establishment of a grammar school where youth might be instructed and fitted for the university. From that day to this Colonial, Federal, and State governments have pursued a uniform course of strengthening and extending the State system of education. The first Congressional Act for the Northwest, passed in 1785, gave the sixteenth section of every township for educational purposes;

and the Ordinance of 1787 made provision for giving to every new State received into the Union "seventy-two square miles of land for the purpose of a university." Under the provisions of these and similar subsequent acts, over seventy millions of acres of land have been granted the States by the Federal Government. The conditions in every case have been, that all "lands appropriated for the use of schools in any State shall be vested in the Legislature of said State, *in trust*, for the use aforesaid, and for no other use, intent, or purpose whatsoever." In each case "Congress made the State its trustee." All the States west and northwest of the Ohio river, when they were received into the Union, accepted this trust, each State receiving the sixteenth section, and those admitted since 1848 receiving also the thirty-sixth section, for educational purposes; from the sale of which large educational funds have accumulated and are constantly increasing. Each of these States also accepted the "seventy-two square miles of land (and some of them even more) for the purpose of a university," and on this foundation has established its State University, which until the present time has been fostered and maintained by successive legislative action. The question is, therefore, properly stated,—Shall the State *continue* to exercise its right of self-protection in the education of children and youth, or shall it abandon that education to the care of ecclesiastical organizations?

It may be safely affirmed that each State is bound in honor either to carry out in good faith the original intent of the Federal Government in donating these lands, by fostering and maintaining the entire system of education in a manner worthy of the State and Nation, and in accordance with the conditions of the trust; or to return these lands, with all their increased value, or the funds derived from the sale thereof, to the Federal Government whence they came. To permit any part of this system to suffer by neglect or die for want of support would be to violate its contract with the General Government, and would place the State beside the readjusters and repudiators of other Commonwealths.

Here let us pause to analyze the phrase, "State education." It is remembered that ours is not a monarchial, but a republican-democratic, government. The public-school system, like the government, is democratic, the power being vested in the people. The theory of this system is simply this,—State-aid and State-supervision with local control.

Bishop Fraser of England says: "Local self-government is the mainspring of the American school-system." Francis Adams declares that, "The doctrine of the sovereignty of the people, pervading

all American social and political institutions, is carried to the fullest limit in the schools of the country." In nearly all of the States, the electors of each town or district, either by a direct vote or through a committee or board of directors, elected by themselves, levy all taxes, build school-houses, employ teachers, select text-books, determine what branches shall be taught, and prescribe rules and regulations for the management and government of the school. State and county superintendents merely supervise the work, and the people exercise the power of control in the public-school system. The design of State aid and supervision is to encourage and systematize the efforts of the people to educate themselves and their children. The wisdom of this system which lays the burden of education upon the hearts of the people is believed to be fully vindicated in its history and results. Notwithstanding the errors and mistakes necessarily incident to it as a human institution so rapidly developed and widely extended, the public-school system as a whole, although in its infancy, has already brought rich returns to the State and Nation.

We may next inquire, Has this system outrun the imperative demands of the State? So long as our government is confronted by an army of five millions of illiterates, one-tenth of the entire population who hold the balance of power in every national election, no one will for a moment claim that in elementary education the Nation should relax her efforts. On the contrary, the safety of the republic demands that the present system of education be supplemented and strengthened by largely-increased national aid to those States in which illiteracy most prevails, and by enactments compelling the attendance of children for a limited period either at public or private schools. Again we ask, Has the State system of higher education outrun the demands of the State? or in other words, Should the State abandon higher education to the care and support of ecclesiastical organizations? It may not be generally known that, not withstanding the efforts of the State and the zeal of the churches in the matter of higher education, and the consequent multiplicity of colleges all over the land, yet the ratio of youth who seek a college education to the whole number of population has been growing less and less year by year for the last fifty years. For statistics upon this subject we are indebted to President Barnard. He says: "The proportion of students in college to the entire population was, in 1840, 1 in 1,549; in 1860, 1 in 2,012; in 1870, 1 in 2,546. In New England, where the population is less variable and there is supposed to be more interest in higher education, the proportion was, in 1826, 1 in 1,513; in 1855, 1 in 1,689; and in 1870, 1 in 1,927."

The reasons for these facts are obvious, being found chiefly in the unprecedented openings for business enterprises from the newness of the country and the consequent development of the national passion for money-getting. We again repeat the fact, that while elementary education has extended, college education has been, and still is, declining; or, as Hon. J. P. Wickersham of Pennsylvania has expressed it, "What we have gained in breadth we have lost in depth." To the State this is an alarming fact! for while higher education has declined, the demand for it has greatly increased. It is a well known truth, that "it is easier for a nation to gain liberty and enforce rights than, having gained them, rightly to use that liberty and enjoy those rights." Especially may it be affirmed that our nation,—its population having increased from three to fifty millions, its territory having extended from a small tier of States along the Atlantic coast to one-half a continent, its agricultural, mining, manufacturing, and transportation interests having grown to an almost incalculable extent,—demands for its guidance a statesmanship far surpassing that of the revolutionary fathers. And this demand is greatly increased in view of the vast influx of foreign immigrants who come to our shores, not from any sympathy with our institutions or habits of thought, but to escape the oppression of the Old World. Unless these teeming millions are caused to apprehend the nature and genius of our institutions, and become order-loving and law-abiding American citizens, our loved Nation will be swamped in the surf that rolls from European and Asiatic shores.

Shall the State, then, as it enters upon the second century of its national life, when these most difficult problems, financial, civil, social, and moral, are demanding for their solution the widest culture, the broadest and deepest scholarship in citizen and statesman, —confronted also by the fact that this scholarship is on the decline,— shall the State, we ask, at this most critical period of its history, abandon higher education to the care and guidance of ecclesiastical organizations whose dogmas may or may not be conducive to the independence and prosperity of the State, and whose educational institutions necessarily in a new country lack means, certainty, and universality?

It may be affirmed that this higher education can be provided by private or denominational enterprise. But private enterprise is restricted to private ends, and denominational enterprise is limited to denominational ends. Rightly pursued, these ends are in harmony with each other and with the ends of the State. But neither the church nor the State can rightly abandon to the other its own ends

or the necessary means for their attainment. If, then, higher education by the State is a necessary means for the attainment of the ends for which the State exists, the State would be recreant to her trust were she to abandon said higher education to the care and support of any other power.

But it is objected that, as only a few seek this higher education, it is therefore unjust to tax the many for the benefit of the few. If the principle were adopted that the State levy taxes only for such education as is sought and obtained by all, the whole system would be destroyed, for even the most elementary education has never been accepted by the five millions of illiterates in our country. If, on the contrary, the principle be adopted of making education open for all and accessible to all, then will the whole system be maintained. Is it not upon this principle that rivers and harbors are improved, roads made, bridges built, courts and jails maintained by public taxation? Not one-fourth of the people ever have a case in court, and it might be declared unjust to tax the many who do not, for the benefit of the few who do, use the courts. Only a few have occasion to employ the courts, yet their maintenance chiefly by public taxation is fully justified on the ground that they are a public benefit. Every man, woman, and child is more secure in person and property because of their existence. The same principle applies to and limits State aid and control in building roads and bridges and improving rivers and harbors. They may be used by only a few but they are open to all, and because they "promote the general welfare" they are rightfully maintained from the public treasury. On precisely the same principle of a sound public policy, higher education by the State is maintained. And the fallacy of the objection lies in the assumption that only the few who receive the education are benefited thereby; that knowledge and discipline acquired are exclusively a selfish possession. As well might one affirm that only the citizens of New York City are benefited by the improvement of New York harbor. As the improvement of that harbor is a national benefit in that it promotes national commerce, so, in the language of Governor Seymour, "What you gain to adorn and feed your mind, you gain for all around you. When you use your property, you take away its use from all others; when you use your knowledge, you can do so only by giving it out to the community in which you live." In other words, a properly-educated man or woman is a public benefaction. Only a comparatively few will seek and acquire this higher education; but it does not therefore become a class-privilege. Genius, rare mental gifts, a thirst for knowledge, are found as often in the homely cottage as in the

costly mansion. If these gifted children, rich and poor alike, have an equal chance to enlarge their faculties, enrich their minds, and develop their intellectual and moral powers, then will we have little to fear from an aristocracy of wealth. Without such provision by the State, poor children, however endowed with talent, would be consigned to illiteracy or to the most arduous struggle after knowledge. Bitter class-hatred would then be almost inevitable. Only a few will seek this higher education. Admitted! but these few are the very ones the State most needs, for they become her guardians and benefactors in that they are the leaders of progress in every department of society, and that on them the State must chiefly depend to solve the great social and political problems relating to law and liberty, property and life. The State, therefore, does wisely when she makes provision for necessary higher education, and such provision is equal because it is equally accessible to all, and "it is just because it promotes the welfare of all."

It will be observed that the State aids and supervises, but does not seek to control, higher education. In higher, the same as in elementary education the policy of the State is to help the people to educate themselves. Hence it welcomes and fosters private and denominational educational enterprises, and at the same time seeks to supplement all these by such State provision for higher education as will keep wide open the door of the college to every child in the State who aspires after a college education.

But let us consider the latter part of the question. Shall this higher education be abandoned to the care and support of ecclesiastical organizations whose dogmas may or may not be conducive to the independence and prosperity of the State, and whose educational institutions necessarily in a new country lack means, certainty, and universality? Whether the dogmas of any church in America are or are not conducive to the independence of the State, we do not pause to inquire. We call attention only to the possibility of the fact as revealed in the history of Church and State in older countries, and that in considering the question of abandoning its supervision and support of higher education to the churches, the State must not lose sight of such possibility. Nor is it necessary that we enlarge upon the last statement in the question; *viz.*, that denominational institutions in a new country necessarily lack means, certainty, and universality. That these colleges lack means will not be denied. That this lack of means is a necessity is evident when we consider, first, the great cost of building and properly endowing a college; secondly, the financial condition of the people; and, thirdly, the rapid

growth of population, especially in the West. Statistics show that New England has invested in her colleges at the average rate of one million and a quarter of dollars each, and these colleges, in order to keep pace with the growing scholarship of the age, must increase and multiply their appliances for instruction and investigation. A Western college cannot compete successfully with Eastern institutions unless it possess equal educational facilities and of course demands an equal sum for its permanent endowment. Consider, secondly, the financial condition of the people. In the West fortunes are yet to be made; business enterprises are in their infancy when outlays are large and incomes are small. In every department of industry, business enterprise, to say nothing of speculation, has outrun the capital possessed. Men doing a business demanding a working-capital of one hundred thousand dollars, and who, to meet this demand, have borrowed fifty thousand dollars, are not in a condition to assist largely in endowing a college. And this supposed case represents the great West. It is rich in resources, business enterprise, and future prospects, but *in debt*, and therefore poor so far as benevolent purposes are concerned. Let us observe, thirdly, the rapid growth of population in the West. Chicago is a little over fifty years old, and has a population of over one half million. Iowa is thirty-six years old, and contains a population of nearly two millions. The United States at her one-hundredth birthday contained a population of nearly fifty millions.

Colleges, notwithstanding the vast amount of money necessary to build and equip them, must keep pace with this growth of population or the Nation will decline in influence and power. It may be safely affirmed that the churches will not and cannot give the financial support necessary to secure such an increase of properly-endowed colleges. The State alone has the ability,—she can do it, and ought to do it. For the State to withdraw her support of higher education and abandon this responsibility to ecclesiastical organizations under the conditions given, would pave the way to national inferiority if not to ultimate anarchy.

Secondly: Shall the State system of public schools receive the moral support of religious men, or shall they abandon to the irreligious the management and control of this system and give such support exclusively to the building and maintenance of denominational schools? It is believed that a grave error exists in the public mind in regard to public schools. Because they are secular or State schools, they are considered "unchristian or godless." Is it not true that in any school, denominational or State, the most potent religious

factor is the presence and personal influence of the Christian teacher? From an extensive observation and inquiry in our own State (and we presume the same is true of other States) we are led to the conclusion that from three-fourths to four-fifths of the teachers in these schools are members of Christian churches. Indeed, many of them are the same teachers found in our Sunday-schools. Not for one hour a week, as in the Sunday-school, but for thirty hours of each week during the six years of their average school-life, the children of our land,—twice as many as are enrolled in our Sunday-schools,—are educated and trained under the watchful care and personal influence chiefly of Christian teachers. Nor is it difficult to account for this fact. The work of training the young mind and heart is so sacred and holy that the pure and the good alone select it as their profession. Instead of saying, therefore, that these schools, conducted to such an extent by Christian teachers, are "unchristian and godless," are we not justified in declaring that there would be, if wisely developed and utilized, more religious power in our public than in our Sunday-schools? As, however, difference of opinion on this subject pertains chiefly to higher education by the State, we will give attention to this.

It is sometimes said that "skepticism and infidelity are found in State universities; that students in them have sometimes lost religious faith, and therefore they should not receive the moral support of religious men." Will some one be so kind as to point us to a Christian college where skepticism and infidelity are not found, or whose students have not sometimes lost religious faith? Over fifteen years of experience and observation have convinced us that there are no conditions, either expressed or implied, imposed upon professors in State universities that are in any way incompatible with the just influence of Christian teachers. Some of the best lessons which we learn in regard to Christian truth come to us incidentally in seeing how religious principle shapes the conduct and life of others. The ordinary history of any school, State or denominational, presents many such opportunities for most effective moral and Christian teaching. Besides, in private conversations, Bible-classes, students' prayer meetings, and on all proper occasions in the lecture-room, the Christian professor may speak as freely in a State university as in a church college. Were it not so, no Christian professor could honorably retain his position for a day. Again, suppose that every Christian minister and layman should give his whole sympathy and support to denominational colleges, and thus all Christian influence be withdrawn from the State university; would they not by this

act virtually present the State university to the irreligious, with all its endowments and appliances, and its consequent educational power, to be directed solely in the interests of infidelity? It should be remembered that State universities exist; that to their continued support is pledged the united faith of the State and Nation; that these institutions are therefore to increase in influence and power, and that this influence will be Christian or infidel in proportion as churches give to, or withhold from them, their sympathy and support

But is there not a necessary rivalry between State and denominational colleges? Will some one tell us how there can be rivalry when, as we have before shown, both State and denominational schools together do not keep pace with the increasing demands of our growing population? Does the presence of an educated man in a community retard or stimulate the intellectual growth of his neighbors? or a successful business man hinder or promote the financial success of the community? or, does the devout and earnest Christian member discourage or encourage the zeal and activity of the church to which he belongs? A successful State university accomplishes for the State what a successful man in any calling does for the community in which he lives. It is believed, therefore, that so far from being retarded in their growth by the rivalry of State universities, denominational colleges are stronger to-day than they would be had there been no State universities. What, then, is their true relation to each other and to society?

The primary object of the State is to protect itself and secure the general welfare by promoting such a degree of intellectual and moral culture as is demanded for all the duties of good citizenship. For this purpose every grade of institution is established, from the primary school to the university, and all the apparatus and appliances needed for instruction and investigation are, or will be, provided.

The primary object of the churches is to advance Christianity by means of education. The theory is, educated mind rules the world. If Christianity is to conquer the world, it must do so largely through educated mind, and this can be best accomplished by founding and maintaining colleges where such minds are trained. The churches seek to train and guide the world's thinkers in the interests of Christian truth, and we believe they were never wiser in their aims and plans than in this. The State schools, being more munificently endowed, and having intellectual culture primarily in view, will maintain in this respect a high position, and stimulate denominational colleges to furnish similar advantages and occupy an equal grade, or students will be attracted from the denominational to the State

schools. On the other hand, denominational schools, having for their primary aim the advancement of Christianity, will permeate the whole system of education with religious influence and compel State schools to maintain a high moral or even religious standard, or students will be drawn from the State to the denominational schools. Each class, then, stimulates the other,—each is the complement of the other, and when adjusted to their appropriate places in our educational system there is no room for conflict or disparagement. Each has a wide field and a grand opportunity,—each deserves the sympathy and support of all good men; and the combined results of their united and harmonious efforts will be a higher intellectual and religious culture, and a consequent nobler civilization.

We believe, therefore, that the State should continue to exercise its right of self-protection by greatly enlarging the facilities for the training of children and youth in all the education demanded for the welfare of the State, and that the State system of schools in all grades should receive the moral support of religious men; and also that the churches should put forth their greatest possible efforts in building and properly endowing their own higher institutions of learning. In this way will the welfare of the State and of the churches be best promoted

INFLUENCE OF CHRISTIANITY ON EUROPEAN MORALS.

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In order to trace the effect of Christianity on the morals of Europe, we must know something of the moral condition of the civilized world previous to its introduction if we are to have any intelligent notion of the change wrought by Christianity, and understand both what it did and what it did not do. For on this latter point there has been much misapprehension; and although the great philologists of this and the preceding century, and many modern historians, have done much to correct it, by showing that the moral and intellectual life of the world has been a constant course of development, I fear there are many who still regard all that is not distinctly Christian as essentially evil, and who, instead of seeing in Christianity the fruit of the tree of life,—which in the very earliest ages began to put forth tender buds and shoots, the growth into manhood of that spirit whose first faint flickerings awoke in the hearts of the men of the long past,—believe that the Christian alone is "saved," and that all the rest of the world "lieth in wickedness," and see not that in thus attempting to honor Christianity they rob it of its highest glory, and pluck the bright jewel of the Fatherhood of God from the standard of the cross.

Matheson, in his "Growth of the Spirit of Christianity," traces the gradual shading of the Old World into the standpoint of the New, and shows how almost every nation of antiquity embodied some idea that was afterward taken up into Christianity. He begins with China, and says the Chinese idea of the Infinite was that of changelessness, of steadfastness amidst the changefulness of rest, breathless and unbroken; but it was the changelessness that resists progress, and although Christianity takes up the idea of immutability, it is not the changelessness of action, but the changelessness of principle, which it asserts to be one of the attributes of God. Immutability, in the Christian sense, is the changelessness of love; in the Chinese, it is the movelessness which, in a popular sense, attaches to a rock, a stone, a hill.

In India we find the opposite extreme. "China deified immutability; India deified change. To the former the most sacred thing in

the universe was the rest of moveless apathy; to the latter the most glorious manifestation of a divine nature was the restlessness of eternal movement." But this was a step nearer Christianity. The God of India is no longer a mere impassive being, incapable of revealing himself. On the contrary, he is recognized as a perpetual revelation. A life which is constantly active is nearer personality than a life which is perpetually still, and in Brahminism there is even more than this. Here for the first time we meet with the idea which has been realized in Christianity,—the incarnation of the divine in the human,—God manifest in the flesh.

But the idea was not fully carried out, as we should not expect it could have been if we believe in the development of the human race. What we are concerned to show is, that the idea was not *new* to Christianity, but that the germ of it was distinctly traceable in Brahminism.

Then in Buddhism there was again a reaction, this time from the unrest of Brahminism. It was a kind of skeptical tendency. If life was so unhappy, why struggle against it? The only blessedness that could befall man must be the loss of life, the extinction of this restless individual being which is ever striving for independence, and whose strivings are the source of its sorrows. Thus in Buddhism the idea of self-sacrifice arises, but again it is not the Christian idea of self-sacrifice,—the joyful giving-up for the sake of greater good,—but it was the self-sacrifice that despaired of finding any good in life.

The next step was that of Parseeism, which was a revolt against this despair. It purposed to trace the root of the evil; it said, if there was unrest there must be something wrong in the universe, and since the wrong could not but be in opposition to the will of the Creator, there must be two sources from which all things flow,—one the source of light, the other the origin of evil. This, though we cannot but regard it as founded on a misapprehension of the nature of evil, was certainly another step toward that religion which was to proclaim redemption from sin as its chief mission-work, and in Judaism this sense of moral evil, which had begun to dawn in Parseeism, becomes the chief feature in the religious worship; but if in one respect Judaism approached Christianity, in another it was farther from some of its leading ideas than many of the Gentile nations.

In Egypt we again find the notion of the union of two natures, which in Greece takes a still higher form. There "man deifies himself." Thus, after the lapse of centuries, the position of the Old World had reversed itself,—from the despair of Buddhism the human spirit was now on the very summit of the mountain of Hope; the

idea of God incarnate in humanity was for the first time completed, appropriated; the Gods were conceived as inhabiting the forms of men, and as mingling in the pursuits and avocations of the human race. This, imperfect as it was, was yet a step in the right direction; and thus to Greece must be conceded the honor of having been the first to grasp the possibility of a permanent union between the human and the divine.

And Matheson adds, "The great defect of Greece was that it made the attempt too soon. It sought a union between God and man without "seeking a separation between man and sin. Greece here is at the opposite pole from Judea. In Judea the sense of sin was so great that no union was deemed possible; in Greece the sense of sin was so small"— theirs being the simple, unconscious, joyous life of childhood, delighting in the beauty of holiness, and far removed from the introspective tendencies of the Semitic mind,—"that the union of God and man was regarded as easy."

And then it "happened that the two nations and the two religions the most unlike in all the world were brought side by side. Indeed the whole world was fast gathering into unity, and this itself was the evident preparation for the change. It will be found, throughout the course of history, that wheresoever an advancement is anticipated in the religious thought of man, there is a gradual concentration of the nations into one common focus. At the period of the Reformation the whole continent of Europe may be said to have been governed by two despotic sovereigns,—the King of France and the Emperor of Germany,—and to one or the other of these the balance ever inclined. And so, as Christianity drew near there seemed ever increasingly to be an anticipation of the prophetic vision. "There shall be no more sea," for all the nations that had been held apart came flocking into one. Greece, under the victorious arms of Alexander, subdued not only Syria and Egypt, but even Judea itself; and thus under one government were blended the two most opposite religions, — that which held God to be incapable of union, and that which believed him to be ever united with man. Nor was it possible that such an amalgamation could fail to be beneficial to both. Judea gave to Greece something of that deep sense of transgression which constituted the very essence of its religion; Greece gave to Judea something of that thought of divine nearness which made the incarnation of God in humanity ever a possible event. Hence in the last days of the old world there arose under the teaching of Philo,—a religion which was at the same time a philosophy, a religion which in its speculations after God did not forget the needs of man. Here, as in the ordinary

mythology of Greece, there is recognized the possibility of a God manifest in the flesh; but at the same time, in accordance with the spirit of Judea, there is discovered a hindrance to his perfect manifestation. There is something which must be overcome ere the light can break in its full splendor, and that retarding element belongs to the nature of man. Philo placed the root of sin in matter, and in this respect weakened his own estimate of its power. Nevertheless, in opposition to the common tendency of the Greek mind, he considered the influence of sin to be a barrier to divine communion. Accordingly the incarnation of God in humanity must now be effected through a mediator. Thus wonderfully near have we come to the spirit of the cross. And when we consider the language in which this mediator is described, we seem almost already to have entered the precincts of the Christian temple."

Having thus come very near to Christianity, we find that these two nations,—the Greek and the Jew,—together with some other races closely allied to the latter, were destined to be its first converts. I quote a passage from Dean Milman[1] which brings out this point:

"Though the religion of Christ had its origin among a Syrian people; though its Divine Author spoke an Aramaic dialect, Christianity was almost from the first a Greek religion. Its primal records were all, or nearly all, written in the Greek language; it was promulgated with the greatest rapidity and success among nations either of Greek descent or those that had been Greacized by the conquests of Alexander; its most flourishing churches were in Greek cities; Greek was the commercial language in which the Jews, through whom it was at first disseminated, and who were then settled in almost every province of the Roman world, carried on their intercourse. Primitive Christianity no doubt continued to speak in Syriac to vast numbers of disciples in those provinces; it spread eastward to a considerable extent,—in Babylonia and beyond the Euphrates, into regions where Greek ceased to be the common tongue. Oriental influences, influences even from the remoter East, worked into its doctrine, and into its system; yet even these flowed in chiefly, or in great part, through Greek channels. The Indian Monasticism had already been domiciled in Palestine, and among the Egyptian Jews, Oriental and Egyptian notions had found their way into the Greek philosophy. Among the earlier Christian converts were some of these partially orientalized Greek philosophers. Many of the first teachers had been trained in their schools. In Antioch, in Alexandria, even in Ephesus, there was something of an Asiatic cast in the Greek civilization."

[1] History of Latin Christianity, Vol. I., p. 1.

This passage also confirms what Matheson says of the drawing together of many nations as the advent of Christianity approached. Lecky[1] also shows, how Rome had become the metropolis of the world, men of all nations mingling in its streets, at the time of the establishment of Christianity. And he and Sir Alex. Grant have also traced farther back the mingling of the two main streams whose later union so deeply modified modern European civilization; but before passing on to this very interesting point, we must note a distinction pointed out by Milman between Greek and Roman Christianity.

We have seen that at the beginning of its course it was promulgated with the greatest rapidity and success among nations either of Greek descent or who had been Greacized by the conquests of Alexander. And then we know that Greece itself, as well as the other countries which it had at one time conquered, had been conquered by Rome, and thus the concentration of many nations rendered still more complete. But though Greece was conquered, it long maintained an intellectual superiority over its conquering rival, and with regard to Christianity these two nations again became rivals. They gave two distinct forms to Christianity,—that of Greece first attaining dominion, and afterward, as in the political world, yielding the empire to Rome.

The first point of difference was that the Greek churches formed a kind of federation of republics. They were held together by common sympathies, common creeds, and common sacred books, and an hierarchy everywhere, in theory at least, of the same power and influence. They were often bound together by mutual charitable subventions; still each was an absolutely independent community. In contrast to this, Roman Christianity gradually assumed a monarchial form, with all the power of a concentrated dominion. The clergy assumed an absolute despotism over the minds of men; not satisfied with ruling princes and kings, they themselves became princes and kings. Their organization was coincident with the bounds of Christendom. They were a second universal magistracy, exercising always equal,—asserting, and for a long time possessing, superior,—power to the civil government. They had their own jurisprudence, the canon law, coördinate with and of equal authority with the Roman or the various other national codes, only with penalties infinitely more terrific, almost arbitrarily administered and admitting of no exceptions, not even of that of the greatest temporal sovereign.

Then with regard to the two systems of monasticism: in the East

[1] History of European Morals.

most of the monks lived in the desert, and tried how they could surpass one another in the tortures they imposed on themselves, and the smallness of the quantity of food on which they could sustain life. In the West monasticism was industrious and productive; it settled colonies, preserved arts and letters, built splendid edifices, fertilized deserts. And these two tendencies, which were exemplified by the retiring into the desert of the one and the mixing in practical life of the other, were still more forcibly brought out in the kind of questions that respectively interested the two branches of the Christian church. Among the Greeks had been for centuries agitated all those primary questions which lie at the bases of all religions,—the formation of the world, the existence and nature of the Deity, the origin and cause of evil; and Greek theology still maintained this speculative tendency, while the only controversy which violently disturbed the Western church was the practical one on which the East looked almost with indifference, the origin and motive-principle of human action, grace, and freewill.

Having now seen how the different nations, each working out apart some leading notion, contributed by the blending of those national ideas to make the comprehension of Christian doctrines rapid and easy. We must endeavor to show how sentiments and ideas more distinctly ethical had been gradually undergoing a change, so that virtues at one time despised were beginning to be appreciated as if they had already caught some of the glow of the rising sun of Christianity, while those that had been the bright stars of the pagan night were beginning to pale in the dawning light of this same sun that was so soon to flood the world with its radiance, and first in this train of lowly virtues that are so eminently Christian, — humility, obedience, gentleness, patience, resignation,—must be ranked humility, obedience and patience also holding a high place.

But to see how they began to acquire this new dignity, we must go back to that first mingling of the two tiny streams from the Greek and Semitic sources which prefigured the later blending of the two full-flowing streams of Greek and Hebrew thought. Stoicism was the result of this first union of Greek and Semitic nations, and it was in this way that such ideas as those of duty and responsibility, self-examination, the sense of shortcoming and moral self-cultivation which were alien to the child-like and unconscious spirit of the Hellenic mind, were first introduced into Greek philosophy. But early Stoicism was still far removed from the Christian ideal; it was much more closely allied to the Roman ethical standard, and it was its congeniality to the spirit of republican Rome that caused it to

take such a deep and lasting hold on that nation; but gradually in the later Stoicism we begin to discover germs of those virtues which were to develop under Christian influence and change the ideal type from the heroic, or essentially manly, into one which in contrast may be regarded as essentially womanly, though equally open to man to strive to attain, and needing for its attainment at least as great if not greater strength, firmness, and calm and persistent resolution. We find, for example, Seneca asking with regard to slaves: "Are they not men like ourselves?" and exhorting his friend to examine himself as to whether he is progressing in philosophy and in life.

Lecky,[1] speaking of this change which took place in Stoicism, quotes the following sentences from Epictetus, "The first thing to learn is that there is a God; that His knowledge pervades the whole universe, and that it extends not only over our acts, but to our thoughts and feelings." "To have God for our maker and father and guardian, — should not that emancipate us from all fear?" "What can I, an old man and a cripple, do but praise God? If I were a nightingale, I should discharge the office of a nightingale; if a swan, that of a swan; but I am a reasonable being,—my mission is to praise God, and I fulfill it."

And he goes on to say, that "the same religious character is exhibited, if possible, in a still greater degree in the 'Meditations of Marcus Aurelius,' but that, in one respect, the ethics of the emperor differ from those of the slave. In Epictetus we invariably find the strongest sense of the majesty of man. As the child of the Deity, as a being capable of attaining the most exalted virtue, he magnified him to the highest point, and never more so than in the very passage in which he exhorted his disciples to beware of haughtiness. The Jupiter Olympus of Phidias, he reminds them, exhibits no arrogance, but the unclouded serenity of perfect confidence and strength; and that Marcus Aurelius, on the other hand, dwelt rather on the weakness than on the force of man, and his meditations breathe a spirit, if not of Christian humility, at least of the gentlest and most touching modesty. That was not, it is true, like some of the later saints, who habitually apply to themselves language which would be exaggerated if applied to the murderer or the adulterer. He did not shrink from recognizing human virtue as a reality, and thanking Providence for the degree in which he had attained to it, but he continually renounced, with an unsparing severity, the weaknesses of his character; he accepted, and even solicited, reproofs from every teacher of virtue; he made it his aim in a position of supreme power

[1] History of European Morals, Vol. I., p. 246.

to check every emotion of arrogance and pride, and to set before him an ideal of excellence which awed and subdued his mind.

These are only a few examples of the change that had taken place in moral ideas between the time of the introduction of Stoicism and the establishment of Christianity. It consisted in the growth of a gentler and more cosmopolitan spirit, increase of reverence, humility, self-examination. It arose partly from the influence of Greek manners and the intellectual ascendency of the Greeks, partly from the civil wars which, breaking down class-barriers, threw open the highest offices to energy and genius. Then the empire was in many ways unfavorable to class-distinctions; freedmen became influential citizens, and often attained a powerful influence over the emperors. Through them petitions were presented and the imperial favors distributed, and thus those who had formerly looked down on plebeians, now sought the favors of those who had formerly been slaves. Also the splendid roads, which greatly facilitated traveling and brought the inhabitants of distant provinces into communion with each other; the physicians, writers, etc., who were slaves; the courage and devotion of many to their masters during the civil wars; the immense number of freedmen in the empire,—all tended to produce that enlargement of view and widening of the sympathies which prepared men to receive the teaching of that religion whose watchword is Love.

And now, to review briefly those points in which Christianity differed from the earlier moral teaching. In the first place, it differed in being a religion that made moral teaching one of its most important functions. Most of the earlier religions had been institutions of the State; the chief officer of state was generally the highest religious dignitary; and the principal object of the religious observances was to foretell the future, avert calamity, and obtain the assistance of the gods. "To make men virtuous was no more the function of the priest than of the physician; it devolved, rather, on the philosopher. Nearly all the great philosophers of antiquity made morals one branch of their inquiry, especially since Socrates,—who, from the prominence he gave to ethics, has been called the first teacher of moral philosophy,—and the Stoics and some other of the later sects became almost entirely teachers of morality. But there was a marked distinction between the Christian teacher and the philosopher; the one fixed his eye on the land from which we must flee, the other on the goal to be attained; the one on the city of destruction, the other on the kingdom that was to attain love. The first sought to amend men by awakening the spirit of remorse; the second, by exhibiting

the beauty of holiness. Each method had its excellencies and its defects. Philosophy was admirably fitted to dignify and ennoble, but altogether impotent to regenerate mankind. It did much to encourage virtue, but little or nothing to restrain vice. Those who can be attracted by the ideals of virtue must be capable of appreciating them, but the depraved and vitiated need to have their eyes corrected to enable them to see that in moral goodness which shall make them desire it. And here, where the power of the Stoic failed, the success of the Christian teacher was marked; and experience has proved that men who are wholly insensible to the dignity of virtue can be so roused by the fear of judgment as to be awakened to remorse and led to reverse the current of their lives, forsake the downward path and commence the slow and arduous ascent of the mountain road, so difficult for those who have suffered themselves to grow accustomed to the easy downward course, but up which they can be so far carried by the power of a strong emotion as to make the continued ascent possible; and thus emotional power was furnished by Christianity. After it, was love, as we shall see hereafter; but with respect to those who needed to be restrained from gross vice, the emotion appealed to by the clergy appears generally to have been fear, and it was by exciting the imagination that they succeeded in getting such a hold on the minds of men. The early Christians thought the end of the world was at hand, and as this belief faded, pictures of the terrors of future retribution were painted with ever-increasing vividness. Thus a new world was opened to men, and the joys and sorrows of this life paled before those of that which was to come.

Another point in which Christian differed from pagan society was with respect to charity. Charity, like religion, was with the pagans rather a State institution; with the Christian it became much more the practice of individuals. One of the emperors decreed that money should be loaned to the poor at a low rate of interest; several men of rank provided schools, and founded other institutions in some degree corresponding to our orphan asylums; and the way in which corn was distributed to the poor in the Roman empire is well known; but nothing to be compared to the hospitals, schools, and the many efforts of individuals in different departments of charitable work in modern Europe, at all existed in the ancient world. But while owning that the difference is great, we must not forget that the difference in the state of society is also great; that where slavery largely prevails there is not the same scope for the exercise of charity; there must be a large independent, yet indigent, populace for the aid of the benevolent to be needful.

Another point in which a great change took place, and which

flowed from the doctrines concerning future happiness or misery, was the opinion as to the sanctity of human life, considered as immortal beings destined for the extremes of happiness or misery. United to one another by a special community of redemption, the first and most manifest duty of a Christian man was to look on his fellow-men as sacred beings, and from this notion grew up the eminently Christian idea of the sanctity of human life. It is a well-known fact that even good men of different nations have failed to see anything wrong in killing some class of the community; sometimes it has been slaves, sometimes Indians or inferior races in colonies, sometimes infants. It was not that they did not perceive the difference between humanity and cruelty, or acknowledge that the one was right, the other wrong; but it is the standard that has differed in different ages; for the same men who looked with indifference, or even with pleasure, at the gladiatorial shows would have regarded as an atrocious crime the murder of a fellow-citizen. Now it was one of the great services of Christianity that, besides greatly quickening the benevolent affections, it definitely and dogmatically asserted the sinfulness of all destruction of human life, either as a matter of amusement or of simple convenience, and thus formed a new and higher standard than any that had hitherto existed in the world.

It was with regard to infanticide and the gladiatorial shows that this influence was most marked. A doctrine of the Fathers, in itself revolting, that unbaptised infants were excluded forever from heaven, had this redeeming quality,—that to it probably we owe the healthy sense of the value of infant-life which so broadly distinguishes Christian from pagan society. It was not that the children were murdered, but that they were probably unbaptised, that excited such universal compassion among the early and mediæval Christians. And with regard to the gladiatorial shows, the Fathers represented the practice as actually sinful, in contrast to the pagan philosophers who, when they did condemn it, spoke of it merely as degrading and inhuman; whereas the clergy refused to admit gladiators to baptism, and excluded Christians who attended the games from communion, which was a terrible penalty to bear. Still, even though thus condemned, it was nearly ninety years after Christianity had become the State religion before they were finally abolished. It was the callousness to human suffering they engendered that rendered them so hurtful; and had they been suffered to remain till the barbarians overran the empire, they might have been seized on by them, and thus indefinitely retarded human progress. The Christian custom of bequeathing legacies for the relief of the indigent replaced the pagan custom of bequeathing sums of money for the games.

Another effect of Christianity was that of promoting philanthropic sentiments among mankind. Among other results, it had an important bearing on slavery. In legislation some important measures were passed, but it is not in the field of legislation we must look for the influence of Christianity upon slavery. Christianity did not prohibit, but distinctly recognized slavery, and labored to encourage habits of docility and passive obedience, not only in the slave but also in other classes of the community; in the monk especially, these qualities were demanded. But much was said by the Fathers about the natural equality of men, the duty of regarding slaves as brothers, of the heinousness of cruelty to them; this had been also said with equal force, though the doctrine was not so extensively spread, by the Stoics, by Seneca and Epictetus, and the principal of the original freedom of all men was repeatedly averred by the pagan lawyers. The services of Christianity in this sphere were of three kinds: It supplied a new order of relations, in which the distinctions of classes were unknown; it imparted a moral dignity to the servile classes, and gave an unexampled impetus to the movement of enfranchisement,—but on this latter point the movement was also prepared for by many other causes, so impossible is it in history ever to draw hard and fast lines; there is always a gradual preparation for higher teaching, and this higher teaching is often perverted when vast numbers of men become disciples, who are not yet sufficiently advanced to understand its true significance.

I fear this truth is still very imperfectly apprehended; it is one of the latest fruits of Christianity; even now there are comparatively few writers who have drunk deeply enough of the spirit of reverence and love to be faithful interpreters of the past. Love and reverence alone hold the keys to the secrets of human life as well as of nature. To the unloving all things wrap themselves in a harsh, repellant garb; they wear an impenetrable mask. We need faith in God to see that He has never left Himself without witness that He has ever been caring for His creatures, leading them step by step to juster views, nobler and loftier ideals, and that what is called the idolatry of the ancients, and regarded as faithful inventions was, as Max Müller and others have shown, the baby-language of the world, its first attempts to give a meaning to what it saw and heard, to express its first conceptions of the things around it, it was appropriate to the age of the world, just as the talk and ways of children are to their age; they only appear absurd when this is not realized. When we unconsciously carry back the educated feeling, knowledge, and culture of the present, and regarding those who were in truth world-children, as men blame them for not thinking and acting as men. Taking this point of view, we

shall be able to appreciate the blessings Christianity conferred on mankind without detracting from the culture which had enabled man to receive it, and also be able to account for the deterioration, doctrines underwent as soon as they were embraced by large multitudes, without ascribing these perversions to the essentials of Christianity

The two ways in which Christianity exercised such a powerful influence mankind over were: first, that in the religious services which so deeply affected the minds of men, sanctifying as they did both the joys and sorrows of life, the difference between slave and master was unknown; the second was its honoring those virtues which could be equally well cultivated by the slave as by any other member of the State, while those virtues that had previously been honored, such as self-reliance, magnanimity, dignity, independence, were virtues which it would have been almost impossible for the slave to cultivate. Having now examined, as far as space will allow, the change wrought by Christianity in the moral standard, and seen how some of the virtues which may be regarded as specially Christian had begun to be cultivated, though in an inferior degree, we must now seek to explain the cause of this,—it was the personal influence which was so powerful in Christianity. Although some of the previous philosophical sects may have exhorted their disciples to set up some ideal personage as an example, we all know that any such influence is very different to that of a living friend which Christ is to all Christians. One who not only possessed all the treasures of wisdom and knowledge so that the wise and learned could drink of His spirit, and, being refreshed themselves, tell the secret to others, write books which should bring sunshine and calm to weary hearts and open to the sons of toil bright regions of thought-life, but who Himself stooped to comfort the lowliest, to comfort the most degraded, who took little children in His arms and awoke the loving reverence alike of wise and foolish, rich and poor. This it is the beauty of a character at once real and ideal that not only at first gave such a powerful impulse to Christianity, but which has been a constant source of renovation whenever errors and superstitions crept in and sullied the purity of its doctrinal teaching. As in the fable of old the falling to the earth renewed the life that was failing, so with Christianity when, wounded and faint, it has fallen back of the crucified. it has renewed its life, and risen up with added powers of growth to struggle again and again with evil, and growing stronger each time, the springs of life have thus been reached; and we may feel assured it will yet wear the crown of a noble manhood and its offspring be truly "sons of God."

THE NATURE OF MIND.

BY J. M. LONG.

A true conception of the nature of mind lies at the foundation of a true science of psychology and of education. The material upon which the teacher works is mind. To develop mind into a harmonious and vigorous activity of all its powers, the teacher must understand the nature of the mental structure, and the laws and conditions of its healthful activity. Through the ignorance of teachers there are more cases of mal-treatment in the psychological than in the physiological world. If we could have as sensible perception of mind as we have of the bodily organism, we should see many mental monstrosities,—half-formed minds,—minds unsymmetrical, sent out into the breathing world.

What, then, is the fundamental conception of mind which should guide the teacher in the work of education? In seeking an answer to this question we will first notice, briefly, certain crude and empiric ideas which have gained currency.

1. Mind has sometimes been compared to a piece of *marble* to be carved into form and symmetry. The prominent idea in this figure is the plasticity of mind and its capability of yielding to the disciplinary power of educational training. This idea makes prominent the influence of the teacher in forming and shaping the mind of the pupil, but leaves out of view the more important internal factor of self-activity which is the main element in all true education.

2. Again, the mind has been compared to a substance to be *impressed* like wax. The prominent idea here is the cultivation of the memory. But the figure is greatly defective from the fact that this impressibility is determined by the internal spontaneity of the mind, and not by external force. Mind, in its essential nature, is not passive receptivity, but responsive receptivity.

3. The mind, by a certain school of mental philosophers, has been called a *tabula rasa*, like a piece of blank paper on which one thing may be written as well as another. This was the view of Locke, who was so intensely opposed to the doctrine of innate ideas. This view of mind had its origin in the doctrine that the soul is wholly dependant on the external world for its ideas and impressions. But the metaphor is greatly defective from the fact that it leaves out of view those innate forms of thought and tendencies of the mind to take on

itself a particular development, just as the physical organism tends to grow into the ancestral type of the race. It is not correct to say the mind has *innate* ideas, but it does possess innate tendencies, aptitudes, or organic predispositions which are the common heritage of the human race. These innate forms of thought are commonly called *intuitions*.

4. The mind of the young learner has also been compared to a vessel to be filled. The prominent idea is the acquisition of knowledge. Such an illustration makes mind a mere passive receptacle to be filled. The children in a school are viewed as so many vessels; some larger, some smaller, all sitting in rows to be filled with that sweet and delicious something, called knowledge.

All these illustrations as to the nature of mind are at best but crude metaphors which, while they suggest some important aspect of mind, are calculated to mislead the teacher in the difficult work of training and developing the faculties of the soul.

In order to find a philosophic basis for psychology and education, we must find the fundamental category of mind,—the genus to which it, as a species, belongs. This fundamental idea, whatever it may be, will serve as the central organizing principle in the science of education. From this fundamental principle all the empiric principles of teaching which constitute its methodology can be logically deduced. This fundamental principle will also bring the science of education into true organic unity with its kindred sciences by exhibiting its logical relations and affinities. As the organism of knowledge unfolds into higher phases of development, all the different sciences tend to assume toward one another a closer logical unity. For a time biology, or the science of life, remained in an isolated and unprogressive state. But it is now making progress, and rising into the definiteness of a science by allying itself with the sciences below it, and by adopting their concepts and methods of investigation. In like manner, sociology, the science of human society, is now making rapid progress by adopting the ideas and methods of the organic sphere. In view of this organic unity existing among the sciences it becomes necessary that any branch of knowledge claiming the rank of a science should define its position in the organism of knowledge by showing its relation to other branches in this organism and what ideas and data it derives from them. Now, since the science of education must be based on a true philosophy of mind, it follows that the fundamental truth which must be the organizing principle in Paideutics, or the science of education, will be the true and essential nature of mind. This must be a comprehensive cate-

gory of thought. Without such a category education cannot attain to the rank of a science. Astronomy did not attain to the clearness and precision of a science until it found an organizing principle by expanding the idea of terrestrial gravity into the larger idea of universal gravitation. We have another striking illustration of the importance of general ideas in science in the inclusion of light, heat, and electricity within the category of undulatory or rhythmical motion as furnished by aëriform phenomena. At first thought no two things would seem more unlike than *acoustics* and *optics*, the science of sound, and the science of light. But modern science penetrating into the essential nature of these two classes of phenomena has proved that they are due to one and the same fundamental form of motion. In like manner, what can seem more unlike to the senses than optics and thermotics,—a sensation of light and a sensation of heat? But science, by a further expansion of the category of rhythmical motion has brought within it the phenomena of heat. And now molecular physics has united under the category of rhythmical or vibratory motion, the phenomena of sound, light, heat, and electricity, which, taken together, we may term *rhythmotics*.

Heeding these suggestions with regard to the nature of the law which obtains in the development of all the sciences, we set out to find the true category of mental phenomena. We, in the first place, call in the aid of consciousness. Doing this, we are assured by an intuition or dictum of consciousness that the most simple and ultimate conception which we can form of mind is that of a *force*, The mind is conscious of itself only when acting, as perceiving, remembering, or willing; but to be conscious of itself while acting is to know itself as a force in energy. Hence, Hamilton says, "I know myself as a force in energy; the not-self as a counter force in energy." This idea of mind as a force is not an inferred idea derived by a discursive process of thought, but is a fundamental idea of intuition. We must, then, conceive of mind as a force endowed with innate and spontaneous energy. But, as Hamilton has said, we can know mind as a force only by placing it in antithesis to external phenomena as counter-forces. "Perception," says Martineau, "cannot befall us by mere exposure to what may be delivered upon us from without. It is not the same as *reception*. It is not realized in a creature,—say an oyster,—that lies flat and has sensations. Neither could it arise from the exercise of an unobstructive activity, spontaneously developing itself in *vacuo*."

But mind is not only a force, but also a *conscious* force, which is self-moved, self-determined, and which acts according to an intelli-

gent purpose or design. It is a force or power of intelligent comparison and discrimination, acting according to the law of interest. The lower unconscious forces of nature which act in the development of the world, we call blind and unintelligent forces. The definite results which these work out must be ascribed to the divine Creator who has established these forces as the expressions of His will. This much we learn of the nature of mind by the metaphysical process of introspection. To learn anything more concerning the nature of mind as a *conscious force*, we must have recourse to external observation and comparison. External nature must furnish us a symbol of thought. All thinking must be carried on under the fundamental and indissoluble relation of subject and object. It hence follows that the internal world of mind to be known must be reflected, antithetically, in the external world of things. Since, then, mind must be expressed in terms of the outer world of perception, a true scientific method requires that it shall be expressed in terms of that particular class of sensible phenomena with which it has the most striking and fundamental analogies. But the force with which mind is most intimately connected, with which it has the closest affinities, is the vital force or life-principle of organic nature. Life may be defined as a spontaneous force which responds to surrounding forces and develops itself into an organized structure. Within such a definition mind itself may be embraced. We are then allowed to view mind as a living, growing, and unfolding force,—a force unfolding into a definite spiritual structure of thought according to the laws of life in general. This conception of mind as life was known to Aristotle, who says, "The action of intelligence is life." We thus have the idea of mind as a spiritual and living force responding to counter objective forces, and drawing from these the experiences which become assimilated and wrought into the fabric of consciousness, mind becomes embraced within the synthesis of universal life because its manifestations and unfoldings conform to those laws and conditions which characterize universal life. We have had a great deal of speculation on the relation of mind and body. The great problem of psychology in past time has been to explain the nature of perception on the false idea of some kind of a *contact* between mind and body. Their point of union is not one of material contact, for this would materialize the mind, but is found in the common concept of life which characterizes both mind and body. In this important concept of life they are brought into the closest union through a *consensus* of action, and a common law of growth and development which characterize both.

We must, then, learn the nature of mind and its laws and conditions of action, by studying it under the concept or category of life. We have before us two fundamental principles to guide us in this study; first that mind as a spiritual substance or force is totally different from the external world of matter; second, that it must be expressed in symbols of thought taken from the external sphere of being. The chosen symbol must be one which will represent most fully and truly the properties and laws of mind. We have in outward nature a regular gradation and transformation of forces from the slowly changing rock up through an increasing dynamic series until we come to the organic world in which the animal presents the phenomenon of power in its highest magazined form. Dynamically inorganic nature and mind present the two opposite poles of being. The fundamental law or primary attribute of the one is *inertia*, while the essential nature of the other is self-activity, or spontaneity. To find the true symbol of mind, we are then directed to that particular department of nature in which we find the important principle of spontaneity or self-movement. But we find this highest dynamic phase of nature only in the sphere of life. Thus, by another train of thought, we are led to life as the true genus or class to which mind belongs. A fundamental property of both mind and life is self-activity. The oldest definition of mind, as given by Plato, *is that which moves itself.* Another consideration identifying life and mind is the fact that both are *organizing* principles. Inorganic life would be a contradiction in terms. Even the amœba which has no permanently specialized parts called organs has the power of forming a temporary specialization of parts, say of a stomach or a foot, as the occasion may demand. Hence, life and structure are correlated. Life ever works according to a pre-arranged plan or pattern, thus exhibiting the law of final cause or purpose. From this aspect of life we get the idea of type which occupies so prominent a place in the study of organic nature. Life, which reveals itself to our apprehension as a spontaneous energy, ever mounting upward along the highway of being, is not a vague, aimless, and random activity which sets before itself no definite object or end. Life ever strives for expression,—strives to embody itself in an organized structure composed of specialized parts called organs, each of which has its own special function to peform. This law or principle of organization also applies to mind. Mind, like all the lower manifestations of life, ever strives after self-development; it seeks to bring into actuality all the possibilities and capacities for action, achievement, possession, and enjoyment which lie enfolded within its inmost

being. To this end it places before itself an ideal of growth and development, and unfolds into an organized structure of intelligence, composed of a number of specialized faculties, such as perception, conception, judgement, and volition. Just as the physical life manifests its energies through different functions, such as digestion, circulation, and assimilation, so the spiritual or mental life has also its specialized modes of action. We have morphology in the sphere of physical life, and also in the sphere of mental life. The body does not more surely tend to grow into the regular human form than does the mind to develop into the mental type of the race if placed under favoring conditions. The vital process, whether physical or psychical, begins with an innate tendency to unfold itself according to a pre-arranged plan. The innate tendencies or forms of thought according to which mind unfolds into a definite structure we call intuitions. It is important to understand the relation between the mental faculties and the mental intuitions. Dr. McCosh says, "To me it appears that the intuitive or necessary principles of the mind are just the fundamental principles or regulative laws of the faculties." Then, the intuitions are simply the forms of energy in which mind or intelligence, as conscious life, manifests its activity. Thus, by embracing mind within the synthesis of life the intuitions about which there has been so much discussion, are made to appear as an illustration of the law of ideal form which characterizes all life. The intuitions, or innate tendencies, and forms of action by virtue of which mind tends to unfold into a pre-arranged structure of thought, feeling, and volition, have their counterpart in the organic sphere of physical life in which the vital energies express themselves in regularly-established forms.

Another consideration, showing life and mind to be embraced in the same category of thought, is the idea of *identity*. Whatever difficulty we may experience in attempting to define our idea of identity, all admit that we have this idea. Whatever constitutes individuality, essence, unbroken continuity, one being in the midst of many changes, is identy or sameness. But such an idea cannot be predicated of mere inorganic being. To have identity there must be no loss of substance, no change of essence, for if this changes in the least the identity is destroyed. The particles of any material and inorganic substance are liable to constant change,—to a perpetual flux and reflux. It is only when we come to life, to the sphere of organic being, that we find identity in its true philosophic sense. Life solves the wonderful paradox of preserving identity in the midst of perpetual change. Uniformity is preserved through multiformity,

simplicity and unity through complexity and plurality, permanence through perpetual change, and identity and sameness through diversity and unlikeness. Hence, while in the lower sub-organic sphere the forces of nature appear in the form of simple opposites, attractions and repulsions, producing integrations and disintegrations, the life-force in the organic sphere combines in itself both those forms of force, and unites and binds together all its multiform changes into the circle of living unity. This important law of life which we may call the law of identity in the midst of diversity, finds its fullest and clearest expression in the sphere of spiritual being. Mental life has its changes, its perpetually varying states of consciousness.—a perpetual influx and efflux of impressions, in the midst of which the *Ego*, or self-conscious soul, preserves its identity, and ever strives for a fuller realization of its ideal of growth and development. The multitudinous states of consciousness are ever dissolving and flowing away, or losing their present form in order to combine anew, into a higher and more complex form. In the life of the soul, as in the lower realms of life, there is a binding, organizing, and unitizing synthesis ever going on which maintains a living identity and sameness of constitution. Mind or consciousness is the bloom and sublimation of life, for here we have personal or spiritual identity, an organic unity of intelligence amid changing and ever-vanishing feelings and ideas. "Sorrows and joys, sensations, thoughts, and actions,—no sooner are they realized than they are pushed out of the way again, to be followed by others in new succession." Yesterday has run out, not like the contents of a sand-glass which may be made to flow back again in a reverse order; the sands of sensation and perception run out never to return. Yet there is a magic power in the soul which in some mysterious way organically connects the past with the present, and which saves the intricate fabric of mind from destruction. Through the organic unity of consciousness the soul knows itself as a perduring reality, though the same order of experiences is never repeated during any two consecutive moments. Then, we know mind as personal identity which consists in the continuity of spiritual life. Organic identity is the continuity of physical life.

Such a conception of mind which ascribes the fact of personal identity to the organic power of life vindicates the essential unity of the soul. The soul, with its feelings, perceptions, and volitions all reciprocally related and mutually dependent, constitutes a living organic unit. This conception of the essential unity and individuality of the soul was of late development in the history of psychology; it was not attained by Plato, nor by Aristotle aud his disciples. With

Plato the individuality of the soul of man was merged in the soul of the world. With Aristotle the Noetic principle of the mind was conceived as dwelling apart in the empyrean of pure form.

This conception of the organic unity of the mind in which all the mental faculties are reciprocally related is of the highest importance in education. There can be no greater error in the art of education than the idea that the mind consists of a kind of *congeries* of faculties, each one of which can be trained separately from the others. This would assign to each individual several souls, instead of one, The true view is one mind with diverse modes of energy,—one self-conscious *Ego*, ever asserting its individuality and identity amid the ever-changing and fleeting states of consciousness. We thus connect mind with life through the true conception of identity which consists not in a definite number of particles arranged in the same unchangeable order, not in a sameness of conscious states, but in the organizing principle of life.

The great problem of speculative philosophy has ever been to find some law or principle which would connect the world of mind and the world of external nature without sacrificing either. Idealism attempts to solve this problem by resolving all things into ideas ; realism attempts the same problem by resolving all into things. But the concept of life unites the inner spiritual world with external nature without sacrificing either, through the oneness and consensus of law and mode of action which characterize organism, whether this belong to the spiritual or the material sphere of being. Life manifesting itself through a spiritual organism within, responds to life manifesting itself through a material organism without ; and both these exhibiting a oneness in their fundamental characteristics. The ultimate nature of life, and whether these two forms of life are at bottom essentially one are questions, not of psychology, but of speculative philosophy. "For aught I know," says Coleridge, "the thinking spirit within me may be substantially one with the principle of life and of vital operation. For aught I know, it may be employed as a secondary agent in the marvelous organization and organic movements of my body." [1] Biology, the name for the general science of life, deals with life as this manifests itself in its organic aspects, or as exhibiting a definite structure or organism. Hence, the fundamental idea or category in all the biological sciences is *organism*. Its subject-matter is the structures, functions, properties, and laws of organism. In material organism we have the two coördinate branches, *morphology*, dealing with structure, and *physiology*, dealing with func-

[1] Biographia Literaria, p. 569.

tion. Since mind, as we have seen, exhibits the essential characteristics of life, being a spiritual structure of definite powers and functions, it, too, becomes embraced within the category of organism. One of the great services which Kant rendered to psychology was the reassertion of the important truth that the "mind is an organism of certain structural or *a priori* capabilities, or forms of operation, which necessitate its mode of commerce with all matter of experience, and the notions, thinkings, and beliefs that might accrue from that commerce." By thus embracing mind in the category of organism, we do not necessarily imply that the material organism of the body and the spiritual organism of mind are due to one and the same principle, as intimated by Coleridge. Different and very unlike forces may act according to a common law. Neither should we, in regarding the mind as a complex organism of powers and faculties, retain with this idea materialistic associations. Materiality does not exhaust the predicate of organism. We also have spiritual bodies, structures, organs, and functions. The psychical like the physical life works according to a definite plan, and therefore grows and develops into a spiritual organism which has a definite structure, special faculties which are reciprocally and functionally related, and special laws which condition this activity. These primary laws which preside over the mental processes and determine the limitations and forms of energy which the mental faculties put forth are the *intuitions*. It is the office of logic to treat of these intuitional laws of thought. If the mind were not an organic structure, having its regular and established modes of action, logic would have no existence. Hence, in dealing with the category of organism in the realms of mind, we have the intuitions which determine the innate structure and form of mental action and development. This part of mental science, usually treated in logic, we may term *mental morphology* because it corresponds to morphology in the lower organic sphere, while the consideration of the psychical functions, in the different forms of *thinking*, *feeling*, and *willing*, properly constitutes *psychology*.

We come now to ask what are the essential ideas of an organism. We may mention the following:

1. *Unity*. Unity or individuality is essential to the idea of an organism,—meaning by the term, *individuality*,—what its etymological meaning implies; namely, that which cannot be divided. The more complex and highly developed an organism, the greater its unity. This is preëminently true of the mind. "Its unity and individuality depend upon and require a complex organism of faculties and p wers. We observe that in all organisms, the more compli-

cated the structure, the more conspicuous is the individuality. Just in proportion as the structure is complex in its organs and in the variety of its possible functions, just in that proportion is there the possibility of an unshared individuality by means of the greater number of particulars in which no other single being can be like this one."

2. *Organs.* In an organism there must be organs or powers capable of performing distinct and definite actions called functions. The loss or want of some of these organs, with their correlated functions, to this extent mars the completeness of the organism,

3. *Coöperative activity.* All the organs coöperate for the life and well-being of the organism. Each organ is both a means and an end,—a means since it works for all the other organs, and an end since it, in turn, receives from them coöperative aid. *Each for all and all for each,* is the great communistic principle of life.

4. *Final cause* or *purpose.* Another essential idea of an organism is the final cause or purpose which presides over and controls the vital processes. In an organism, whether material or spiritual, we see all the vital energies directed to the realizing of an ideal form of growth and development,—a form which lies enfolded in germ, and which gradually unfolds into a fuller realization of itself. Hence, our analytic thought must go beyond the mere juxtaposition of parts, must go beyond the idea of coëxisting organs as manifesting themselves in space, and fix itself upon the idea of relations, in order to gain a clear conception of an organism. In a material organism this consensus and community of relations are maintained through the mutual coöperation of a number of material organs; in a mental or spiritual organism this community of relations is maintained through the mutual coöperation of a number of spiritual faculties. The true idea, therefore, of an organism is a highly abstract one. The intellect, little accustomed to habits of abstract thought, in endeavoring to form an idea of an organism falls short of the true conception by merely thinking of a collection of coëxisting parts or organs. The abstract idea of the whole which is as essential to the existence of the parts as the parts are to the existence of the whole, must be clearly grasped by the mind. If the mere juxtaposition of parts constituted the true idea of an organism, then a machine would be an organism.

5. *Assimilation.* Another essential idea of an organism is the power or property of assimilation. It is the essential nature of an organism to draw material from its environment, and to assimilate it into its own structure. In sub-organic nature we have mere aggre-

gation, a transfer of energy from mass to mass, and from molecule to molecule; but in organic nature we have a transformation of energy, an ascent from a lower to a higher plane, in which there is an assimilation into the vital structure of the organism.

6. *Development.* Another essential property of organism is growth and development. An organism is not made; its parts are not mechanically fitted together as in the case of a machine, but *evolved.* All the parts or organs of an organism unfold together through an internal expansion and differentiation of structure and function, and and all participate in and grow into full vigor and maturity, through the common life of the whole. This inclusion of mind within the category of organism places psychology on a new basis, suggests new and important ideas, and furnishes a new set of psychological terms. Mind is no longer regarded as it has formerly been in text-books on psychology, in its *statical* aspects, requiring a mere enumeration and description of a certain number of mental faculties; mind, as a growing and unfolding organism, is presented in its *dynamic and genetic* aspects, ever developing into higher and more complex forms of thought, feeling, and volition by successive integrations and combinations of simpler states of consciousness. Thus the organism of mind, like the organism of the body, passes through various stages of growth and development, and unfolds its powers in an ever-advancing complexity until it arrives at maturity.

We may now combine the foregoing elements and characteristics of an organism into a definition. Kant says, "An organism is a body, the parts of which are mutually ends and means." This only brings out the idea of reciprocal activity among the organs. Mr. J. J. Murphy, in his work on *Habit and intelligence*, says an "Organism is that which consists of parts which are all in functional relation to one another." This definition, like Kant's, only brings to view the idea of reciprocal relation and activity among the different organs. Assimilation, which biologists regard as the most fundamental characteristic of an organism, is left out of view. We have seen that the essential ideas of an organism are *unity, organs, coöperative activity, final cause* or *purpose, assimilation,* and *development.* We may define as follows: *An organism is a vital structure which, by the process of assimilation, grows and develops through the unity and activity of different organs which are both means and ends.*

But organisms of every kind are correlated with what biologists term environment. For a long time animal organisms were studied with no regard to their environing relations. The result was that the science of life made little or no progress. Such a method of study-

ing organisms was similar to the effort which men made in endeavoring to account for the phenomenon of combustion without taking into the account the nature of the atmosphere as the surrounding medium. Nearly a hundred years elapsed from the time when Torricelli discovered the weight of the atmosphere, up to the time when the nature of combustion was explained. During all this time, the minds of men were groping in darkness because the atmosphere as the essential medium in which combustion occurs was not taken into the account. Biology has passed through a similar history. To place this science on a firm basis, environing relations had to be taken into the account; the structure and functions of an organ can be truly explained, and their beautiful adaptations and correlations clearly brought to view only by viewing the organism itself in continual interaction with its environment. What has been thus found true of biology is equally true of psychology. Mind as a spiritual organism is correlated with its environment, cosmical and social, and draws from these the multitudinous experiences which are taken up and assimilated into the fabric of intelligence. The social relations, as these appear in the three-fold form of the family, the community, and the State, are preëminently the mental environment, without which man's intellectual and moral faculties could not be developed.

> **"Man is not man, but in society,—**
> **Man means society."**

It is from its environment that the mental organism draws those ideas, beliefs, and impressions which stimulate it into the activity of growth and development. It has been truly said that "the fundamental characteristic of man is spiritual hunger; the universe of thought and matter is spiritual food. He feeds on nature, he feeds on ideas; he feeds, through art, science, literature, and history, on the acts and thoughts of other minds." Solitary man living apart from the society of his fellows is an animal. Now, the higher the development of an organism,—in other words, the greater the variety of organs and functions with which it is endowed,—the greater is the sum of life which it is capable of enjoying. It is through its diverse organs that the individual becomes capable of being affected by the multitudinous qualities and relations of things around it. Man as a mental organism has, as already said, a two fold environment, the world of nature and the world of ideas,— the *cosmos* and *humanity*. The greater the variety of the relations in the environment of an organism, the greater must be its development, the more highly endowed it must be in special organs to enable it to respond, success-

fully, to these relations. This is preëminently true of human society. Here, the greater the variety of individuals and relations in the social environment, the greater, also, is the sum of life for each individual member, and the more extensive and complex must be the development, intellectual and moral, in each individual, to enable him to enjoy this life. Diversity, complexity, and evolution in the social environment demand a corresponding diversity, complexity, and evolution in the mental organism. "The task of the instructor," says Herbart, "consists in transmitting and interpreting to the new generation the experiences of the race." A true education, therefore, must mould and develop the mental organism into a harmonious correspondence with the external cosmical and social order of the world. Whatever is good in the social environment, and which it is desired to perpetuate, must be taken up and assimilated into the mental life of the social units. "The world, past and present, is ours, but only so far as mind and soul can lay hold of and possess its wondrous beauty, and still more wondrous meaning; beyond this, it belongs to the dull ox as much as to us."

The advantages arising from thus including mind in the synthesis of life and organism are many and great;

1. *By such a synthesis we explain the obscure and less-known, by a more familiar and better-known class of phenomena.* This is in accordance with a true scientific method, and is also a fundamental principle in the art of education. Planetary motions remained an obscure and unknown class of phenomena until identified with the more familiar phenomena of terrestrial gravity as exemplified in falling bodies. The historical development of psychology shows that it has made progress in the same degree in which it has become emancipated from theology and metaphysics, and has adopted the method, the concepts, and the language of natural science. We thus explain the spiritual by the material, and the laws and phenomena of the mental organism by those of the physical organism. We thus gain clear and tangible ideas of the spiritual phenomena of mind, and by this means lay the foundation for obtaining the same kind of control over them which we already possess with respect to material phenomena. The ideal end to be aimed at in all the metaphysical sciences is to obtain such a knowledge of the laws and combinations of spiritual forces as to be able to work in the world of mind with the same scientific prevision with which we now work in the world of matter.

2. *By including mind in the genus organism, its true nature is brought to light, and a true organizing law is found for the science of*

education. The logic of science shows that every department of knowledge in attaining to the rank of a science must have a threefold development; it must have its first principles, its middle principles, and its practical rules. The science of education, thus far, has consisted mainly in an empiric methodology made up of a number of rules and principles which have been struck out through the practical experience of the school-room, but which have not yet been arranged into the coherent and systematic form of a science for the want of an organizing first principle. Now, we find that our empiric educational ideas and methods round up into clearness, and attain to the system and precision of science in the same degree in which they become logically articulated with organic laws and conceptions. The system of education for young children known as Kindergarten, in precision and scientific, systematic form, has gone beyond all other departments of education. It is based on the instinct of play common to healthful, exuberant childhood. But child-play itself finds its true explanation as one of the many beautiful and interesting manifestations of life as it mounts upward along the highways of being, and strives for expression and development. Hence, by the synthesis of mind in the category of organism, the educational process can be expressed in terms of organic phenomena, and we can use the terms *growth*, *development*, *organization*, and *assimilation*, in education with meanings as clear and precise as when used in physiology.

3. Another special advantage in expressing the process of mental education in terms of organic law arises from the fact that mental and physical education should go together. We thus gain a great advantage by reducing both processes to the same fundamental law, and by thus having the same set of terms for both the physical and the psychological. With such a generalization of science there is no good reason why mental education should not become as precise and certain in its methods of procedure as physical education.

But mental and organic phenomena not only come under the same general formula of life, but the special laws are also both physiological and psychological.

(*a.*) *The law of growth and development.* This law, which evolves the complex out of the simple, the explicit out of the implicit, holds throughout the entire domain of life as a phenomenon of organism. Growth and differentiation of structure through the expansion of internal forces is a law which rules alike in all phenomena which are vital, mental, and social. "That in the development of the psychic faculties of the organism," says Prof. Vogt, "we have the same

process of perfectionment, the same division of labor, the same gradual differentiation as in the development of the bodily organs and tissues, cannot be doubted."

(*b.*) *The law of self-activity.* This, also, is a law of life which holds true both physiologically and psychologically. The expenditure of the physical forces renders inorganic beings inert, and less capable of returning to a state of activity. But life in both the physiological and the psychological sphere feeds and grows on its own activity, the essential law and condition of life is self-activity so that to cease to act is to die. Hence, the great and important function of the teacher is not to impart knowledge, but to rouse up the self-activity of the mind and to impart a mental impetus which shall enable the pupil to get knowledge for himself.

(*c.*) *The law of habit.* This law which finds its empiric statement in the oft-repeated saying that early impressions are most lasting, is a property peculiar to organism. It is not till we come to the sphere of organism that we see the phenomenon or law of habit, the tendency and predisposition of a thing to happen again just because it has happened before. The only account which we can give of this important law of habit as it operates in the realms of life and mind is that it is a property of organism. "Habit and intelligence," says Mr. J. J. Murphy, "are co-extensive with life, and peculiar to it." The psychological aspects of this law are of the utmost importance, owing to its bearing on education.

(*d.*) *The law of heredity.* This is also a law of organism, holding true both in physiology and psychology. Innate tendencies, instincts, aptitudes, and predispositions are transmitted from the parent organism to its offspring. If the human mind has grown and developed, as we believe it has, during historic time, if "the thoughts of men have widened with the process of the suns," this must be regarded as a result of the law of heredity. By virtue of this law, habits and impressions which have by repetition become an organic part of either the physical or the mental organism are transmitted to descendants, so that in the higher regions of intellect the slow developments of thought and research become condensed into axioms and intuitions.

(*e.*) *The law of memory.* Memory, which has been the mystery of mysteries in metaphysics, is a property of organism, and is no more mysterious than any other property of organic being. In the sphere of physical organism we see an illustration of memory in the power of the vital force to preserve its identity and sameness of structure in the midst of perpetual change. The scar made on the hand in early life is perpetuated, and grows as the body grows, thus

showing that the life-principle remembers the injury which it has suffered. The entire nervous mechanism,—brain, spinal cord, and ganglionic centers,—have their unconscious memory ; otherwise they would be idiotic and incapable of being taught their functious. The mystery which has hitherto beset memory has arisen from the fact that it has been exclusively confined to the sphere of consciousness. Empiric psychology, in endeavoring to explain the mystery of memory, and to find the fundamental law of its operation, has never been able to go beyond the mere *association* of ideas. But mental association, as Hamilton has shown, presupposes and involves the unconscious activity of the mind. Then, the association of ideas must find its ultimate law or basis in the organizing life-principle of the *ego*, or soul, which binds together the successive states and impressions of the mind into one indissoluble continuity. No amount of repetition, or prior co-existence of ideas in the mind, could bind these together into a coherent unity were it not for the vital energy which seizes upon these and makes them an organic part of the mental structure.

4. By including mind in the category of organism, psychology is made to take its true position in the hierarchy of the sciences, and becomes a branch of biology. This will best appear by giving a classification of the biological sciences as they now stand out in their latest correlations and developments. Phenomena of various orders, vital, mental, and social, as has been said, are now best expressed in the language of mechanism, because this department of science has attained the greatest precision and accuracy. This presents the subjects of scientific inquiry in a two-fold point of view, the *statical* and the *dynamical ;* the one expressing ideas of coëxistence, the other of succession. This principle will divide biology into two coördinate branches which may be respectively termed *biostatics* and *biokinetics.* Biostatics views organisms in the statical and coëxistent relations of structures and functions ; biokinetics will consider them in the successive changes through which they pass during the different stages of their development. Biostatics will, in turn, divide into two coördinate branches, according as it deals with the organism of matter or the organism of mind. The first aspect gives botany and zoölogy, dealing respectively with the organism of plants and the organism of animals ; the second gives psychology based on the organism of mind. Biokinetics also divides into two coördinate branches according as we study the successive phases of development through which organisms pass in their historic aspects, or the causes which have operated to produce these changes. Thus we will have

historical biology, dealing with the formal laws of development in organisms, and *dynamical* biology, dealing with the laws of the forces which have operated. We may, then, fitly close by drawing out these correlated branches of biology into the following tabulated view

Organism :—Biology, the science of Life.

- Biokinetics.
  - Dynamical Biology
    - Anthropology, treating of the causes operating to produce the different types of mankind.
    - Biology, origin of species.
  - Historical Biology
    - Hexicology,[1] the history of successive organisms.
    - Embryology, the history of individual organisms.
- Biostatics.
  - Organism of mind. (Psychology.)
  - Organism of matter
    - Zoölogy, dealing with the organism of animals.
    - Botany, dealing with the organism of plants.

[1] This term, suggested by Prof. Newark, commends itself to the thoughtful, because the Greek *hexis*, habit, directs the mind to one of the important laws of organism which has operated in the adaptive changes through which organisms have passed during the life-history of the earth.

THE SCIENTIFIC ASPECT OF PERSECUTION.

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It may be taken for granted that but few persons will dissent from an assertion, not only of the propriety, but also of the duty imposed upon everyone of declaring his convictions, if they be expressed at all, clearly and without evasion. The tyranny of precedent is passing away; and after ages of repression and denial it is now admitted upon all sides, that beliefs which are founded in reason and justified by research are entitled to a patient hearing. This doctrine, however, is a modern innovation, for in all past periods, that which seems axiomatic now was then a pretext for persecution. All historical evidence shows that reactionary movements have been most vehemently as well as most honestly opposed by those who were really convinced that the ends sought by investigators had been already attained, and that destructive results alone would follow additional inquiry. Then, as now, this conception marked the inveterate antagonism between the scientific spirit and faith. Then, as now, conservatism tacitly assumed the superiority of learning to culture, of the past to the present, and maintained, or by implication advanced the opinion, that whatever proof there may be of the human mind having greatly developed heretofore, no grounds exist for supposing that it will continue to do so hereafter. The fundamental principle of this school is, that although many important discoveries yet remain to be made, whose social and economic outcome will conduce to the welfare of mankind, that structure upon which these depend, that also to which, with its correlative mental factor, every adjustment of man to his environment is due, has completed its growth and consummated its powers.

It is because this assumption is not only at variance with facts, but likewise radically vicious in its tendencies; and for the reason that in every era when it has been made effectual it has underlain the practice of intolerance, that an attempt will be made to present an outline of the grounds upon which a denial can be founded. The subject-matter of this paper is critical, but scarcely constructive; its object is to review a tendency of the mind under certain conditions, for the elucidation of which illustration has been used in preference to a more abstract method of presenting what was in-

tended to be conveyed, and in no degree has this been intentionally made the medium of animadversion against any system, either moral, civil, or religious.

"Times change, and we are changed." This is a trite quotation, but it is also a terse statement of what lies at the root of all that remains to be said of persecution considered from the scientific standpoint. It announces, on the one hand, a truth which is so palpably and universally valid that no contravention of it is possible; while upon the other, it takes notice of a phenomenon whose character is, both in its origin and mode of operation, so recondite and mysterious that, although it has been studied always, the latest acquisitions of science and philosophy only enable us to partially comprehend the manner in which it will ultimately be explained.

Ideas vary from time to time, and the expression in action of this variation is what is commonly called history; but why do they change? what is changed, and what changes it? An account of any single integer of that vast sum termed civilization exhibits a constancy in variation which has at last been ascribed to the operation of natural law. The phases of individual growth, the transitional forms of an organic type, and the successive stages of national evolution, proceed determinately and in an established order. "From the highest point of view the voluntary vanishes from our sight." Amid the play of forces and the results of their interaction, individual effort is lost, and even the tokens of man's mightiest combinations become inconspicuous. Properly understood, this truth should inculcate a charity apart from mere emotion and separate from specific creeds, Throughout the strange and various story of the past it points us to what "lies in silence and strength behind" all the greatness and meanness, the achievements and the failures of the world. To define the limits of attainment cannot invalidate the obligation of action, nor can the repudiation of anthropocentricism by scientific rationalism ever lessen moral responsibility or depreciate any just claim of human pride. Postponing for the present a formal statement of the principles involved in these postulates, let us examine some conspicuous example of their effects as an introduction

Heresy is a time-honored term of reproach, and one that has usually been applied to the weaker party in a dispute, In the sense in which it is now used the word makes its first grand appearance in that famous decree of the Emperor Theodosius, by which he abolished paganism and suppressed the Arians. "It is our pleasure [so runs the text] that all the nations who are governed by our clemency and moderation, should steadfastly adhere to to the religion which was

taught by St. Peter to the Romans; . . . . and which is now professed by the Pontiff Damasus. . . . . We authorize the followers of this doctrine to assume the title of Catholic Christians, and as we judge that all others are extravagant madmen, we brand them with the infamous name of heretics." As this is a typical document, and admirably represents the mental attitude of persecutors, we may profitably study it. Not, however, with reference to the religious belief it authenticates, or even as a Christian reformation, but simply with the view of determining the spirit in which it was conceived, and the proposed manner of its enforcement.

Most educated persons are aware that, in the interval between the dissolution of the Apostolic College and the Council of Nikaia, the Church had no formal and complete body of doctrine. It is customary to suppose that its members were then extremely devout, but it is unquestionable that their theology was at this time in a very chaotic condition. Added to certain irregularities which existed among those who may be called orthodox, there were others, both in the East and West, prevailing in that other body of believers whom the former regarded as heretical. Various founders of sects had appeared to whose opinions the Fathers opposed the weapons of controversy with doubtful success. More than this, the Emperors themselves had often fallen into fatal error; not only the Romans, but the provincials also, were infected, and the greater part of Gaul, and almost the whole of Spain, were in a state of religious revolt. Those synods held at Sinuessa, Alexandria, Elvira, Carthage, Rome, and Arles could not exercise the authority or be certain of the inspiration properly belonging to an ecumenical council, and hence the assembly of the bishops of the universal church in the fourth century, for the purpose of promulgating an authoritative system of faith. Neither the modes of procedure adopted by these prelates, nor the results they arrived at, are now in question. Suffice it to say, that they failed in attaining the object for which they were convened, and that the Council of Constantinople was called by the very Emperor who was the author of this ukase against heterodoxy, for the purpose of completing the work which the Nicean fathers had left unfinished. This subject of the imperial proclamation has been dwelt upon, because it would be difficult to find a better illustration of arbitrary power in alliance with bigotry. On the one hand Theodosius contemplated the instant and unquestioning recantation of a faith whose remote origin was lost in the vague and dim magnificence of ancient tradition, under whose auspices Rome had grown from a petty and piratical colony to be the mistress of the world, during whose domi-

nance all her intellectual triumphs had been won, and in whose communion those great exemplars of valor and virtue had lived, whom he both emulated and venerated. Upon the other part, his edict threw the patronage and punishing power of the State altogether on one side of a disputed doctrine which is from its nature undemonstrable, and this at a time when, both numerically and otherwise, the parties were nearly equal. He knew the chaotic condition of the Church; he was a Spaniard himself, and perfectly well aware that all Arians were not "extravagant madmen." At the time he issued the decree referred to, he was surrounded by orthodox prelates whose characters were far from being unimpeachable, and his peace was often disturbed by those growing disorders which culminated at the election of the same Damasus spoken of as an example of holiness, in the sedition and massacre described by Ammianus Marcellinus.

Under these circumstances certain questions relating to the mental state of Theodosius force themselves upon our attention. Was he sincere in denying the existence of either truth or reason in any other doctrine except that held by himself? There is no doubt that he was entirely so. The Emperor was then a weak and violent person, easily influenced, and prone to submit his judgement to authority? On the contrary, in a degenerate age he was a man whose life exceptionally reflected the glory of Rome's heroic past, brave, temperate, and of a most steadfast mind. Despite these endowments and virtues, was he then but a fool, thus to credit his own infallibility and that of a system untested by time, and whose working, moreover, had in many particulars rendered it obnoxious to the criticisms of both heathens and heretics? Such was by no means the case. Theodosius is generally admitted to have been gifted with very considerable natural powers. How, then, had he freed himself from the restraints of justice and mercy,—how eliminated those incentives to conservatism that former events and his own experience and reflection would naturally originate?

While psychology, which is now a science, was entangled in and obscured by metaphysics; before its principles had been ascertained inductively, and while what was accepted as true concerning the mental faculties and functions of the brain rested upon subjective analysis alone, it would have been impossible to reply to these questions in such a manner as to afford an adequate guaranty for the rejoinder's accuracy. But neither the difficulty of framing a sufficient explanation, nor the doubtfulness of its acceptance, can detract from the obligation to render what is supposed to be an answer. The demand for a valid reason for intolerance, would now be properly met

with a statement that it was chiefly due to the non-education of certain inhibitory centers in the brain, whose functionation involved deliberateness of volition, because their activity could not be excited without soliciting attention to the associations which experience, both hereditary and acquired, has connected with almost all acts. If the principles upon which this rejoinder rested were required, it is in some such terms as the following that they would be expressed. There is an objective as well as a subjective side to every intellectual phenomenon. The mind is developed as the brain is evolved, and the evolutional process goes on correspondingly in both. This essentially consists in a change, alike of structure and function, from simplicity to complexity. Those relations which are established physically, and those which are established mentally, are correlative, and exist in every degree of intricacy, from the comparatively few and simple connections which are formed by the self-adjustments of a savage to his surroundings, up to the almost innumerable multiplicity of such connections, organized in the civilized man through the adaptation of himself and his race to the environment during an immemorial past. In the relatively uncomplicated intelligence corresponding to the relatively undifferentiated structure, ideation and emotion manifest themselves directly in action, because the conceptions and feelings competent to modify or control activity are not rendered nascent, and for the same reason there is little or no doubt as to the propriety of conduct as well as an extreme inveteracy of habit.

Finally, the faculties of the intellect are not substantialities or entities packed away in the brain-case, and existing there in a discrete and inscrutable manner; they are, physiologically, nervous centers in different degrees of development; and psychologically, coördinations of special orders. If it be admitted that this statement of our mental constitution is true, the deductions in the case referred to are obvious. Once convinced of the paramount authority and supreme importance of a certain dogmatic system, Theodosius acted against non-conformists with entire singleness of spirit. He has been selected as the central figure about which to group these remarks, because it is difficult to find another man of anything like equal power, who was so exempt from the influence of those extraneous causes which have frequently been accessory in determining the practice of persecution. There was nothing for him to gain or lose; his heart was not embittered by controversy, and he had suffered neither at the hands of Arians nor pagans sufficiently to warp his natural character. The attitude he assumed was that of pure, unadulterated bigotry, and he was a bigot not because he was a bad man, but for the reason that he

was an undeveloped one. Under like conditions such persons will always be intolerant if they are not restrained by indifference.

Let us look backward! Who were the scourges of the early Christians themselves? Not the worst Emperors; not those whose names are associated with the very wantonness of crime; on the contrary they frequently owed their trials and sufferings to the best characters that the dark annals of the Cæsars preserve. Nero is of course excepted, since it is known that his enormities in this direction were committed for the purpose of withdrawing public attention from himself.

Change the view to that period which, in many respects, is so appropriately called the "dark age," and among those gloomy and fateful figures that loom above the multitude as their instigators and leaders in the most direful excesses of fanaticism, many, no doubt, may be selected, whose motives were impure and whose sincerity was problematical. But to say that all of these men, or still more, that all or even a majority of those whom they incited to deeds before which posterity stands appalled, were interested, vindictive, and utterly abandoned wretches, and that this explains their conduct, is to assert that which will not stand criticism for a moment. Such an allegation invites us to believe, among other absurdities, that human nature was then radically different from what it is now; that at certain periods, more or less remote from the present, men have either transcended or fallen short of humanity. Besides this, the statement takes for granted what we all know to be untrue, namely, that immense masses, differing from one another in all the circumstances of life, have periodically combined during several centuries for the purpose of practicing a wicked and notorious fraud, that innumerable individuals, contrasted in everything else, have associated with the common purpose of acting without a sufficient motive and enduring without an adequate reason; that they have trampled upon their instincts without enthusiasm, consecrated a cause they knew to be unworthy, and devoted themselves to a principle in which they disbelieved.

Reason and experience, negative opinions so disconsonant with their suggestions, and both science and philosophy find a true expression for their conclusions on this subject, in those memorable words in which Jesus Christ commended His persecutors to the mercy of God,—"Father, forgive them, for they know not what they do!"

If one needs illustrations of the effects of intolerance, where, alas, and in what department of human affairs, can they not be found?

The causes leading to the Theodosian statutes were not unique, nor was his opinion that faith might be forced or, failing in this, that the refractory should be destroyed, different from the theory of action accepted by the civil and ecclesiastical powers for a thousand years after his death. Not until the termination of this period was there any general and successful revolt against tenets at once so vicious, so destructive, and so absurd.

In studying the eras of persecution with a view to the illustration of what has been said upon the conditions determining its expression, those arbitrary and inexact discriminations inseparable from almost all historical classifications, cannot be avoided No age stands alone, none can be separately viewed intelligently; but in so rough and imperfect a sketch as this, where the object is rather to depict than to define, outlines of the salient features of isolated periods may be used with advantage. In the sixth century, "the overthrow of paganism and the corruption of Christianity were both complete." From this time until that in which Abelard headed the revolt against authority which may be said to have inaugurated the modern spirit as a power in the world, the annals of Europe afford little that is available for our purpose. All the potentialities of persecution were present but they were inoperative in the absence of causes arousing them to action. Although this statement is not rigorously exact, it nevertheless approximates to exactness. With the fall of the Western Empire the world entered upon a long career of ignorance, superstition, and barbarism. In the East, Cyril had denounced the Institute at Alexandria, and his successor, Theophilus, destroyed it. Those worthy predecessors of reformers like St. Louis, Ximenes, and Zumarraga, the Saints Ambrose, Marcellus, and Martin, urged on the faithful, and what the barbarians had left of the arts of Italy and Gaul was well nigh obliterated. In Athens the schools of philosophy were empty, and in Rome her jurisprudence was forgotten. Constantinople and a few other Greek cities preserved some imperfect remains of classic civilization and genius, but the former could not be disseminated, and the latter found no rivals. But in the twelfth century, amid the vague, uncoördinated movements and indefinate, half-articulated utterances of an awakening world, there was heard a voice that every one, from the successor of St. Peter to the serf, listened to with respectful attention, declaring that the first representative man of our modern era had ventured to maintain the cause of reason against authority. St. Bernard, the "Mellifluous Doctor," did not inveigh against Abelard in vain. Both were eminent men, and both were true to their respective principles; but in this initiatory contest be-

tween ecclesiasticism and rationalism the champions were unequally matched. Upon the side of the Saint was ranged most of the learning and all of the power of his age. His opponent stood comparatively alone and unsupported, the exponent of one of those minorities who have always been in the right; who have everywhere been persecuted, and who have never been effectually suppressed. In A.D. 1140, the Council of Sens examined the works of Abelard and decreed that "he had made void the Christian faith"; and further it was decided that the time had come "to silence him by ecclesiastical authority." Then, but not wholly on this account, there began a struggle whose end is, as yet, far beyond our view. The dominant powers awoke to a sense of their insecurity, armed themselves against the tendency of the times, and set their forces in array with the object of stopping a natural and inevitable development, whose principles, character, mode of origin and strength, they utterly miscalculated and misconceived. Then, also, the persecuting spirit shook off its apathy and went abroad with all its tremendous power for evil. For centuries those bloody waves "on whose crests gleam the fires of martyrdom," rose and fell with a dreadful uniformity. Wherever those rights which are now held to be most indefeasible and most sacred were asserted, there also was the destruction most wide-spread and complete. We know that this was unavoidable, and for the most part must acquit of intentional wickedness those whose actions filled Europe "with tears, and blood, and mourning"; but who can reconcile their hearts to this necessity, or depreciate and deny the only means by which it can be done away with? It may be objected that these illustrations are taken from church history, as if the clergy had been the only persecutors. The reply to this is, that at the time spoken of almost all departments in which mental power could express itself were unsecularized. Men were expected to square every intellectual process by theological standards, and if they could not do so, so much the worse for them. A tribunal was established which was of universal competency and unlimited jurisdiction. In a word, the Church was paramount, and while this supremacy lasted, all other histories are merged and lost in hers. Premising only, that when the expression *theological* is hereafter used it is never intended to mean *religious*, let us inquire what was the relation, as expressed in external events, subsisting between the dominant power and persecution, considered as a consequence of incomplete mental development.

It is well known that after the triumph of the Byzantine system, and the union of the spiritual and temporal powers. whatever culture yet remained unexpunged was speedily lost. In lieu of this an elab-

orate Christian mythology with an immense literature grew up, which was partly of spontaneous origin, and partly constructed from portions of classic, Gothic, and early Aryan tradition. Hagiologies took the place of history, and science and art became extinct.

But let us not misconceive this age. "Human nature never submits long to self-mutilation." The hierarchical establishment which it is so easy to criticise and so common to decry, ruled mankind for a thousand years without opposition, and did so in virtue of its adjustment to the period. It was held sacred in the hearts of millions whose spiritual needs it ministered to, and whose moral necessities it satisfied, and in this regard it is unassailable. Its weakness lay in its polity, its vulnerable point in the doctrine that what was once right must be always right. Wise and far-seeing as it was, the impossibility of fitting invariable formulas to a progressive intelligence was overlooked, and where this was observed, it is undoubtedly chargeable with attempting to stifle that intelligence, let its motives for so doing be what they may.

During the period spoken of, as in every other known to us, ignorant and undeveloped man transferred to the external world those conceptions of causal agency and intelligent action, which his limited powers of observation and imperfect self-knowledge furnished him with. His attention was arrested only by what was unusual, and as he was wholly unable to correlate the more striking and particularly the more disastrous phenomena of nature, with ordinary causes and common effects, they served only "to refract and distort his reason." That the sun rose, or an acorn became in time an oak, did not strike him as being remarkable, but an eclipse, an epidemic, or a wind strong enough to uproot the oak, filled his mind with illusions begotten of terror and astonishment, and under the influence of these he was guilty of the most extravagant crimes and follies. At this period supernaturalism was realized with a vividness of which we can form no conception. To the medieval, everything that was exceptional was magical, and all that he could not account for, miraculous. Incapable of a suspended judgment, and with the worst of his superstitions sanctioned by the Church, persecution followed some of the wild fancies of his undeveloped brain as certainly as famine and disease did his ignorance of agriculture and hygienic laws. It is with involuntary feelings of sorrow and contempt that we remember that our not very remote ancestors would have burned us with clear consciences for doubting that penetential processions prevented the spread of the plague, or that in the matter of comets, which were known to be signs of the wrath of God and harbingers of His ven-

geance, the ringing of consecrated bells did not afford a rational hope of relief, If these failed to affect the action of gravitation then excommunication might be resorted to, a remedy successfully employed by His Holiness Galixtus III., in the case of a very terrible appearance of this kind with which milder measures had been altogether ineffectual. In this era mathematics, chemistry, and physics were "black arts"; eminent physicians owed their success to association with familiar spirits, and hysteria, epilepsy, and insanity were instances of diabolic possession, whenever they were not inspirations from heaven. Then old women became notoriously addicted to turning themselves into wolves, and young ones to intriguing with the devil. By the supernatural forces that had been ascertained to reside in roots, incantations, and several kinds of filth, weather could be made, disaster ensured, disappointment, sorrow, sickness, and death produced at will. But, happily for the human race, nature was not wholly committed to the keeping of Satan and his emissaries. Saints fortunately abounded at the time, and these accomplished many great and remarkable works. They dried up marshes with prayers, and also caused streams to flow up hill. Furthermore, they took up their abode in fens, and wallowed in the mud like the frogs who committed suicide when they learned that their croaking had disturbed the recluse's meditations. Likewise, as examples to human nature, they grazed after the manner of Nebuchadnezzar, and stood on pillars for a series of years, and burrowed in the earth, and built themselves up in walls. It was generally understood that these and similar devotional exercises conferred upon their perpetrators a quasi-divine power, and accordingly we learn that these blessed ones could stop tidal waves, cause amputated limbs to grow again, and even raise the dead.

Any great library will show that this picture is not overdrawn; but in contemplating the effects of mental habit upon organic structure, in observing in these illustrations how the various degrees of mental alienation are produced by an intellectual or emotional bias persisted in until the channels of thought become invariable, and the nerve-tracts that lead away from those by which habitual impressions, however initiated are transmitted, fail to irradiate stimulus to contiguous centers so that more differentiated thoughts might occur, we must remember the fact that devoutness and discipline such as this did not always produce disease, or the sanctity of the medieval model constantly issue in monomania. There were men who came unscathed and uplifted from the cloister and the desert; who went forth in the spirit of their master, ministers of peace and love and mercy,

to succor the destitute, to comfort the afflicted, to strengthen the weak, and to raise up the down-trodden. Careless of sickness, pain, and death in their calm heroism and constancy of purpose, perfect as no others have ever been perfect in their subordination of self to motives the most holy and generous, bravest among the brave, truest among the true-hearted, they claim at our hands an admiration and reverence which it would be a disgrace to refuse, and have left to posterity the example of lives that no human excellence can ever surpass.

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We have seen that in all men at a certain stage of development, the elements requisite for persecution exist in a nascent state, and that a due amount of specific cerebral excitement being given, intolerant action will certainly follow. Since consecutiveness of illustration is non-essential to the design of this paper, the wars in the East may be selected from among other instances, not because the fanatical spirit exhibited in these was more marked than it was in many subsequent ones, but simply for the reason that they were on a grander scale, and had more important results.

The Eastern Empire fell before the Vandal invasion of Africa, the Persion conquest of its Asiatic provinces, and the final assault of the Turks. Of these, the first shows the immitigable economic disasters sometimes caused by bigotry, while the second and third exemplify both the moral effects produced upon those who have been subjected to its influence, and the manner in which the relatively undeveloped intelligence may be affected by circumstances. For about a century and a half the successors of Genseric persecuted the Catholics of Numidia and Mauritania with unrelenting hostility. At the termination of this period they suffered the same evils which they had inflicted upon others. The Greek invasion was brought about by various causes, but it was prosecuted in the same temper that had actuated the Arian barbarians themselves. Five millions of these heretics are said to have been destroyed, and the country itself, at one time among the most important of the Roman provinces, was effectually and finally ruined.

This tended to the destruction of the Byzantine power through impoverishment and decreased strength, but the Persian campaigns, although they accomplished similar ends, involved moral consequences that were much less conspicuous in the former case. In that, the triumphant party were Christians; in this, paganism overcame Christianity in the ordeal by battle, concerning which it was believed that heaven always interposed to protect the right.

When Chosroes invaded the empire, the persecuted sectaries of Syria, Egypt, and Asia Minor acted as men who in their grade of evolution, and who had experienced their misfortunes, might be expected to act,—they became the allies of the Persians. It is, however, with the effect of this war upon the orthodox that we are at present concerned. The success that attended the invading army was great and rapid, and within a short time Chalcis, Heirapolis, and Antioch fell. But for our purposes it is the circumstances under which they succumbed, rather than the fact of their conquest, that is of interest. Not a city yielded to the arms of the infidels whose ramparts were not said to be guarded by saints and angels and whose gates were not believed to be under the protection of the Mother of God. Not one was assaulted that did not display in its defence consecrated banners, images that had fallen from heaven, pictures and relics that had wrought numerous well-attested miracles. Their populations had seen the foe approach without disqnietude, for they were assured that the Almighty power so frequently displayed in the furtherance of minor purposes and the accomplishment of unimportant ends would certainly, in this hour of their extremity, interfere to save His altars from desecration and His religion from shame.

Horror and consternation attended the calamitous issue of these hopes, but to the fall of Jerusalem succeeded infidelity and despair. When the Persian standards were planted upon Mount Zion and not a single thunderbolt of all that had been promised blasted their ranks, then such men's confidence in the truth and reality of that which they had been taught utterly departed, and as the reaction from an unreasoning faith is always toward an equally unreasoning scepticism, since both are the resultants of similar conditions, the the consequences of their revulsion of feeling soon manifested themselves in their conversion to Islamism. Mediæval Christianity came to an end in this instance not by the substitution of a better for a worse form of belief through correlative mental and physical evolution, but prematurely, and in consequence of events that the people were unable to comprehend.

Far different is the scene presented by the West. In the midst of that pandemonium into which Western Europe was turned during the fifth and sixth centuries, the greatest power this world has ever known silently grew up. Upon this, except in its direct relation to our subject, no criticisms need be made. Suffice it to say, that under Gregory the Great it assumed a definite form, that from this time until the formation of the Lombard League it was the sole representative of order amid surrounding anarchy, and that, absorbing every

surviving element of civilization, it only stood between the world and universal barbarism.

But the system of Gregory was the same as that of Hildebrand, Boniface VIII., and Leo X.; from the first it was committed to principles that were essentially unchangeable. That the doctrine of infallibility should finally come in conflict with human intelligence was inevitable, and how it has fared in that contest we know. The subject of our inquiry is limited to a discussion of the means employed in maintaining this dogma, and the efficacy of these as shown in their historical development. Here, as elsewhere, a particular period is arbitrarily selected for the purpose of illustrating the scientific side of the subject.

By what is technically termed the *â priori* method, inductions from the phenomena of consciousness are projected externally; these abstractions from the concrete, as they all originally were, are posited in the outer world, given "a local habitation and a name," and henceforth regarded as existing realities. It is by this process, mainly, that the elements have been peopled with supernatural beings. A belief in magic and witchcraft is almost coeval with human existence, but it required a peculiar combination of circumstances to render the superstition dangerous. In the interval between the twelfth and fifteenth centuries many great and portentous events had taken place. Liberty of thought arraying itself against authority had borne the worst that persecution could inflict, and was not destroyed. The confidence of the ecclesiastical establishment in the resources at its command sustained several severe shocks. In France, England, and Italy the efforts of the Saxon and Franconian emperors toward reform in this body were sustained by a powerful party among the clergy. Philip le Bell, who had violated the personal sanctity of one Pope, chiefly contributed to the election of another, whom he transferred to his own dominions, and to a great extent controlled. Two Councils,—those of Basle and Constance,—disavowed the spiritual supremacy of the Supreme Pontiff, and imputed his assumed official infallibility to themselves and to other convocations of the universal church. Knights of the Temple were accused of irreligion and blasphemy; the south of Europe was filled with heretical sects. Averrhoism had penetrated into the northern universities; the regular and secular clergy were at open war with each other everywhere, and finally such books as the *Everlasting Gospel* and *Commentary on the Apocalypse* diffused rationalistic opinions from the Mediterranean to the upper Rhine, and from the Atlantic to the Danube.

To counteract these evils the Inquisition was established, the discipline of Catholicism became severer and the censorship of ideas more rigorous. Far more generally and deeply than we can now imagine, this prevailing anxiety and apprehension of the heirarchy affected the public mind; so that the earlier part of this era especially was characterized by an almost unexampled degree of mental perturbation. In the midst of this doubt and distress,—perhaps to a great extent on account of it,—an epidemic of superstitious madness broke out which, whether we consider its disastrous moral effects, the unspeakable suffering, or the loss of life it occasioned, has but few parallels among the memorable misfortunes of mankind. "Witchmania," and the persecutions it gave rise to, are subjects of common reference, and it is also widely known that this form of supernaturalism prevailed extensively, and that many unfortunate people perished in consequence. Comparatively few persons, however, are aware of the vast body of literature existing upon sorcery and witchcraft, or of the dreadful state of mind that these records portray. "More people believed in Satanic compacts and the malign arts of sorcerers then than disbelieve in them now"; the church gave all of her overwhelming influence to the support of these wild and pernicious fancies, and the terrible severity of those punishments she caused to be inflicted upon thousands and tens of thousands of unhappy wretches for purely imaginary crimes, had a direct tendency to confirm the masses in their credulity, and enlarge the sphere in which the persecuting spirit displayed itself.

Fancy can present no picture of more complete and hopeless misfortune than the state of a prisoner of the Inquisition accused of magic. The charge itself cut him off from all human association and sympathy. During forty-eight hours before appearing in the presence of his judges he was allowed neither food nor drink, and was kept in darkness. When he was arraigned counsel was denied him, it was assumed that he was guilty, and he was tortured till he confessed himself to be so.

At the suggestion of places haunted by the memory of great sorrows or crimes the mind involuntarily attempts a restoration of the past, but even when surrounded by everything that can prompt or aid the imagination such efforts are always inadequate. Vague emotions possess us, but it is a beneficent law of nature that under normal conditions even our own personal sufferings can not be revived by ideal initiation. Echoes in the deserted halls of the "Holy Office," twilight shadows flickering on the arena of the Coliseum, the wailing of the wind in the galleries of the Mammertine prison,

become vocal and take shape from recollection, still we know these for what they are, illusions of the eye and ear whose source is within ourselves. Yet there is one point of view from which these concommitant superstitions and precautions may be regarded, that makes them appear to us with a peculiarly horrible aspect. The universal belief that magical practices were possible, and the general conviction that those who were punished for them had been justly condemned, must not only have originated a wide-spread apprehension that each one might himself become the victim of diabolical arts, but also in some cases, an assurance that such indeed was the fact. None except those who have really studied nervous epidemics can appreciate the futility of the usual means employed to arrest their progress, or the inefficacy of ordinary reason to prevent contagion. If it be denied that a sane man can ever suppose himself to be what he is not, imagine that he has acted when he was in reality passive, or conceive that he has observed what it was impossible for him to have seen, such a denial must come from those who know little of the capacity of the untrained mind for self-deception, the tricks of memory, or the unreliability of the evidence often furnished by the senses. Whoever has observed a confused and terrified child confess faults of which it was innocent, mistake its fancies for facts, and actually doubt its personal identity under different circumstances, has had as good an illustration as can be given of the phenomena referred to. Nothing less than the creative power of genius can give to the conjoined fragments of a by-gone age the semblance of its former life, but enough has been said about the structure of the mind and the functions of the brain to show that many a man must have been done to death as an associate of Satan whose earthly agonies were intensified by the anticipation of those which he believed were to be eternal; and, knowing this, we can understand the ravings of delirious remorse that the horror-struck listeners by the cells of the condemned frequently overheard, their obstinate rejection of the sacraments, and their blasphemies at the stake. At the time, these were regarded as unquestionable evidences of guilt; to us they are sad suggestions of the misery that they must have endured.

Thus far the part taken by the church in this persecution has alone been spoken of, but it was not only Inquisitors who were persecutors. Lay judges put in force the statutes against sorcery as readily as clerical ones, and civil tribunals were as active in their prosecutions as ecclesiastical courts. Everywhere, from Naples to Stockholm, and from London to Prague, cases of witchcraft were being tried, and armies of witnesses were, for the most part unconsciously, perjuring

themselves in all the languages of Europe. Physicians accustomed to the symptoms of nervous disease, and lawyers trained to the analysis of evidence, could see no flaws in the proof. Bishops, and princes, and philosophers, and savants, recognized no antecedent improbability in the charge; and if the process by which truth is legally established,—if testimony alone can be relied upon to substantiate fact, then magic was a reality and not a delusion, for few, if any, of our most indubitable beliefs are nearly so well authenticated as this.

How came this monstrous illusion to be abandoned? Not certainly through the force of argument, or by any demonstration of its falsity. The Reformation left it untouched, and Luther and Calvin accepted it as fully as Bodin and Sprenger. It disappeared in the only way that superstitions can disappear; the human intellect outgrew it. No faith is ever destroyed,—it dies a natural death. Gradually and silently, one by one, its declarations become inaudible and cease, its denunciations are disregarded, its promises forgotten.

Those truths which are mighty and which prevail, rise slowly, like the stars, and like them are revealed by the motion of the world. In this movement the mind takes part; and as our sphere no longer occupies its former position in space, so the intellect, in obedience to the laws that govern its evolution, has passed beyond the control of those dark powers that once enthralled it. Shall we look backward with regret or forward with hope?

A TRUE ORDER OF STUDIES IN PRIMARY INSTRUCTION AND THE PROPER TIME FOR EACH.

BY MRS. JOHN H. BAIRD, BURLINGTON, VT.

[Continued from last Number.]

READING.

To teach reading naturally every lesson that is given to a beginner must be an object-lesson, and every lesson that is ever given must be a language-lesson as well. An older person can readily imagine the object he is to read about, but a child wants the object or its representation before him. Therefore, when a reading-lesson is to be given an object should be presented which the child can see, think about, talk about, and read about.

Suppose the first lesson is to contain the word "nest." A real nest should be provided for the children to see and touch and talk about. A child is directed to look at the nest, and the question is asked, "What do you see?" The sentence is at once obtained, "I see a nest." The child is told that he may read just what he has said, and the teacher writes on the board the sentence, "I see a nest." This sentence is read several times, and even in the first lesson some one word is selected and remembered, as the word "nest." After the second lesson on that sentence,—and in that time all the words should be remembered separately,—a new word may be added and the sentence formed, "I see a pretty nest," or, "I see a small nest." Or the object in the sentence may be changed, and the child reads, "I see a book." Several new words may be taught in this way, as boy, girl, cat, dog, etc., and then the subject and verb may be changed.

By thus using objects this subject is taught in a natural manner, the mind is appealed to through the faculty of perception; and as a sentence is a unit of expression, it is as readily comprehended as a single word would be, and more readily than an abstract letter could be. Following this plan, a sentence is taught first, next the words of the sentence, after that the sounds in the words, and last of all the letters, which are but the arbitrary representations of those sounds. After the first two or three lessons have been given, the reading lessons should be followed by an exercise in writing a portion of the reading-lesson.

Experience has proved to many, at least, that it is advisable to begin with the reading of the printed characters instead of the script, because books are printed, not written; and for a similar reason it is desirable in the beginning to train the hand to the formation of the script character.

Against the seeming objection that this way of working presents two difficulties at a time, the *fact* stands that of two classes beginning school at the same time, one being taught to read print and to print on their slates, the other to read print and to write on their slates, the latter made just as good progress in reading as the former, and in addition were better writers,—writing so well that at the end of sixteen weeks they were able to take a little reader and write one of the lessons from it on their slates without a copy or any help whatever. A whole word should be written at a time, not a single letter. The writing should be done on slates ruled for the prrpose, so that in the beginning the children learn the correct height of the letters.

Phonic Analysis.—When reading-lessons have been given for four weeks, work in phonic analysis should begin. Simple words should be taken first, and as soon as the class is familiar with the sounds, all new words should be analyzed in the same lesson or in the succeeding one. This phonic analysis aids in securing distinct enunciation, and although our English spelling is not entirely, or even largely, phonic spelling, yet phonic spelling is after all the best means yet discovered in aiding to accomplish the difficult feat of spelling correctly. The letters of the alphabet should be taught incidentally during the first year.

The writing-lesson which follows the reading-lesson should have about the same lengh of time as the reading-lesson itself.

After the first year the work in reading will gradually lose its objective character, but the meaning of all new words should be taught, and these words should be written on the board by the teacher and spelled and pronounced by the class before attempting to read a lesson for the story. A child should never be allowed to read a piece to bring out the meaning until the teacher is, at least, reasonably sure that there is no word in the lesson that will prove a stumbling-block. Children should be trained to read promptly at sight; for this purpose a generous amount of reading-matter is necessary.

During the three years remaining in the primary school, readers of a suitable grade are recommended, together with as much supplementary reading-matter as can be judiciously introduced; but whatever is attempted should be thoroughly done. When a lesson in reading s finished, an abstract of the lesson should be required from

the class; this abstract may be oral, or written, or both. The oral part of this work may be done in a very few minutes if questions are asked properly. Time should be allowed for this, as an important part of the lesson, for it is an excellent way to cultivate the use of good language. A written abstract of a reading-lesson is a foundation for future work in composition. If this work is done thoroughly, the proper amount of reading-matter furnished, all incorrect expressions corrected when they are made, a clear enunciation and natural expression persistently required and obtained, there is no reason why the graduates of primary schools should not be able to read and speak correctly.

WRITING.

As soon as a child has learned the letters of the alphabet, the writing of each letter should be carefully taught. The first half of the second year may be devoted to the small letters, beginning with the more simple ones, as *i*, *u*, *w*, *v*, etc., and then taking the more difficult ones. The last half of this year should be devoted to the capital letters. Fifteen minutes each day should be devoted to writing, proper, aside from the time given to written reproductions of other lessons.

During the third and fourth years this work should be done with pen, ink, and paper, and to make good writers an abundance of paper is far more necessary than a clean copy-book. In this, indeed, it is only "practice that makes perfect," but by a careful analysis of each letter and by comparing letters which are incorrectly made with a perfect letter, ideas of form and symmetry will be developed, and children will soon learn to appreciate the use and beauty of good handwriting.

At this time, also, in connection with regular work in writing and spelling, children should be taught how to write and address notes, letters, etc.; also, how to make out a bill. This last work must, of necessity, come toward the close of the fourth year.

SPELLING.

After the first year spelling should be taught by letter as well as by sound. Words from a reading-lesson, an object-lesson, or names of any common objects may furnish the matter for these lessons. These words should always be obtained from the children, and spelled by sound before being placed upon the board. The words should then be spelled by letter and learned and reproduced upon slates, either from memory or dictation. Very early in this work con-

siderable language-work may be done by having the children write sentences containing the words in the lesson. Usually the children should construct these sentences themselves, but an occasional lesson in dictation is good drill.

Now as our spelling is not entirely phonic, it is well here to present some of its peculiarities and difficulties; this can be done without teaching any rules. As soon as children begin to spell by letter, after having spelled by sound, they will discover that some words contain letters which have no sound. When this fact is discovered, several lessons should be given on words containing silent letters, and the term silent should be applied to such letters. The words which are taught in these lessons should be common ones that can be obtained from the children by questioning. These words should be spelled first by sound, then by letter, after which the children should be led to select and name the silent letters. When a sufficient number of words have been written on the board the heading or subject of the lesson should be obtained from the children, and written over the words, as in the following lesson:

Words containing silent e.

Blue,	Home,
Tame,	Name.

The heading of the lesson should be the last thing placed on the board in order that the children may generalize for themselves.

During this year similar lessons should be given on words containing the long and short sounds of the vowels represented by those vowels only, and in such words these sounds should be recognized and named, as—long sound of *a*, short sound of *a*, etc. Similar lessons should be given on words containing two or more initial or terminal consonants.

During the third year it is well to give lessons in which all these different vowel sounds may be recognized and named,—as, long sound of *a*, short sound of *a*, broad sound of *a*, etc. The mark which indicates these several sounds should also be taught. It is not necessary to use the term vowel and consonant in giving these lessons if a teacher prefers not doing it. The different vowels which represent the same sound may be taught in this connection, and is a great help in future spelling. The various letters which represent the same sound should be taught separately and reviewed together before taking a new sound; thus, the long sound of *a* is represented by *a*, *ai*, *ay*, *ea*, *ei*, *ey*, etc. One of these representatives should furnish the matter for a single lesson, and the children should state

that in these words the long sound of *a* is represented by certain letters, as:

Long Sound of a *represented by* ai.

Paint,	Rainy,
Drain,	Fainted.

In this, as in the other cases, the children should be led to distinguish the sound and its representative; and the last thing in the development work of the lesson should be the heading. This work may be varied by introducing some miscellaneous spelling-lessons, such as the names of the days of the week, the months, names of seasons, names of holidays, names of occupations, etc.,—whatever the necessity of the class and the ingenuity of the teacher can suggest. Each lesson should be followed by a written reproduction, and all mistakes should be corrected as soon as possible.

During the fourth year the spelling work should consist of dictation exercises, letter writing, and drill on words from other lessons. Before leaving a primary school a child should be taught how to write a letter correctly. A part of this can be done in regular writing-lessons. The remainder should be done in connection with spelling. Work of this kind should be given frequently. A child learns by practice. It is a good plan to have a portion of the reading-lesson copied, and attention called to capitals and punctuation; this should be studied, and then erased and re-written from dictation; or, as was suggested previously, the hard words in a reading-lesson may furnish material for a spelling-lesson, and the next spelling-lesson may be an abstract of the same reading-lesson containing the story in the child's own words. To be beneficial this work must be done carefully and thoroughly. But it is the natural way of learning to use language, therefore it must be the true way. In this everyday world of ours it is much more important that a child should know how to pronounce the word *February* correctly, also how to spell the word and begin it with a capital letter, than to have him able to state that it is a proper noun, third person, singular number, etc.

Teach first, the *art of language* and the *science* will take care of itself in its own good time.

ARITHMETIC.

Of equal importance with the subjects just considered is the subject of arithmetic,—the science of numbers. In this subject there is a greater exercise of mental power than in any other. It is also one of the best means of awakening the intelligence. Yet considering

the time which is devoted to the study of arithmetic in our common schools there is probably no subject which shows as poor results. It is universally admitted that mathematics is the test of mind, that a faculty of dealing readily with figures is a gift given to some and withheld from others. But any ordinary mind must be able to grasp the fundamental ideas of arithmetic even if all cannot become good mathematicians; just as all may become fair readers, though the gift of oratory is only for the favored few. In regard to text-books, those generally considered fit for a primary grade will do fairly well as reading-books but are worthless as arithmetics. Those intended for later use are too scientific for the little ones. There has been too much of an attempt at cramming these little minds. The work of learning must be slow in the beginning. "The true end of intellectual education is the attainment of mental power, after which comes its application to practical and scientific purposes; and that plan of early education which dwells long on first principles and does not make haste to make learned is most economical, because most effectual." You may attempt to pour a quart of liquid into a thimble; the thimble becomes full but the rest is lost; so, into these little minds which can contain but one idea it is useless to attempt to cram a dozen; one is retained, the other eleven are lost. The child may become discouraged, but it will not become learned.

Here, again, we look to Nature. The baby began the study of arithmetic when it said, "Two hands." But the baby said, "Two *hands*," not, *two*. Many poor people who can neither read nor write, and who have no knowledge of the science of arithmetic, have a very definite idea of the value of numbers as applied to money, and cannot be readily deceived in regard to the amount due them even when compelled to make their own calculations. The baby got his idea of two from the object; the poor person gets his idea of the value of money from the coin itself. It was by arranging miniature soldiers on the floor of his room that Napoleon planned the arrangement of his forces on the battle-field. It is the *object* seen through the eye that makes the most vivid impression on the mind, and arithmetic considered in the natural way is a series of object-lessons on numbers. Not that perception is the only faculty of the mind that is exercised, but that it is the help to all others. This work must be done slowly, and step by step, if it is done thoroughly. If any one doubts the necessity of objects in this work, an observation of a number-lesson in almost any primary school will convince him that to the average child *fingers* are of more use than *figures*.

In the attempt to gain more natural and satisfactory results in this

branch of knowledge, Grübe seemed to have reached the true idea when he said, "To know a number really, means to know it also in its most simple relations to those numbers which are smaller than itself." According to his idea, then, to make this work thorough each number should be considered in all its relations to those numbers which are smaller than itself before a higher number is taken. Thus in learning the number *two* a child should know all about *two* before taking *three*.

With numbers, practically speaking, but two things can be done; they can be increased or diminished: the idea of one naturally follows that of the other, so that multiplication, which is but a short process of addition, and division, which is but a short process of subtraction, should be taught with addition and subtraction, thus keeping all fundamental ideas of arithmetic connected in the mind as they naturally are.

A child who can say, "One marble and one marble are two marbles," can say, just as readily, "I can take one marble from two marbles and have one marble left. If a child is made to see, to know, and to say that, "One apple and one apple and one apple and one apple are four apples," "Two apples and two apples are four apples," "Three apples and one apple are four apples," "Three apples taken from four apples leave one apple," "Two apples taken from four apples leave two apples," "One apple from four apples leaves three apples," "Two apples and one apple from four apples leave one apple," "Two times two apples are four apples," "Two apples can be taken from four apples two times," "Three apples can be taken from four apples once and one apple will remain," "One apple is one-fourth of four apples," "Two apples are one-half of four apples," "Three apples are three-fourths of four apples," etc., and is made to apply the same thing to different objects and the same number is considered for several lessons, it will no longer be necessary for a teacher to hear a class say on one day that, "Two and two are four," and the next day learn that, "Two and two are five, or seven, or nine," and finally be obliged to tell them to count their fingers in order to be sure that no answer given is a correct one. Not that fingers are not well enough in their places, but a number that is *learned* must be a fact in the child's mind above and beyond all question, and until it is learned in all its relations it is not a fact.

To accomplish this end the first work in arithmetic should be entirely with objects,—with balls on a frame, pebbles, crayon, books, marks, etc. The mind should be trained to grasp the full idea of the value of numbers by observation on them as illustrated in these

familiar objects, and when by this process the abstract idea is acquired, the arbitrary symbol should be given.

In this way the children themselves will eventually form rules from the very examples upon which their minds have been exercised, and will in this way build up their own science of arithmetic instead of trying to analyze that science, which, contrary to nature, *comes down* from above instead of *up* from below. In the following plan of work Grübe's method is used in part.

To some this minute work may seem wearisome and useless, and to a careless teacher it is so, just as any good plan is. But those who know the difficulty of acquiring thoroughness in this branch will be willing to carry it out. In regard to the detailed following of this work in the latter part of the course a teacher must use her own judgment. Classes differ in ability and more of the particular work will be necessary for some classes than for others, but all must begin at the beginning.

The first lesson must of course be on the number *one*. In this, about the only thing that can be done is to drill on the use of the word in answer to the question, "How many?" No work in subtraction of one from one should be attempted. The idea of *something* is more necessary than the idea of *nothing*. With the number *two* the work really begins. Work on this number should occupy two or three lessons. The children should be led to state that, "One mark and one mark are two marks," "One mark from two marks leaves one mark," "Two times one mark are two marks," "One mark can be taken from two marks two times, "Two marks can be taken from two marks once," and that "One mark is one-half of two marks." Here all ideas underlying addition, subtraction, multiplication, and division have been developed with one number, and that number has been thoroughly learned. This work should be done with several objects, not using figures at all, and for correctness of idea and expression the concrete form of expression should always be used in the beginning as, one apple and one apple are two apples,—not one and one are two.

During the first year, work of this kind should be done with every number as far as ten, which is the first natural stopping-place. As many lessons should be given on each number as is necessary in order to have the number thoroughly learned. These lessons should be afterward reproduced on slates, using marks to represent the numbers. In every lesson questions should be asked which call for the exercise of conception and reason, as, "If I had 5 cents and gave you 3 cents, how many cents would I then have?" A complete

answer should always be insisted on in this early stage of the work, as "You would then have two cents." The simple answer 'Two," or "Two cents" should not be accepted at this time for it is quite as necessary to train children to speak correctly as it is to train them to think correctly. When work of this kind has been continued as far as the number *ten*, the children should be given the reason for using figures and should be taught to make the figures. The work on each number should be reviewed as its representative character is taught, and the sign of the different operations should be taught as is necessary in the work, so that children can read expressions like the following: $2+2=4$, $4-2=2$, 2 is ½ of 4, etc.

This work will occupy the first year. A lesson of twenty minutes should have the same length of time for reproduction. The work with objects should not be discarded here, but should be continued as far as practical throughout the entire primary course.

The second year the work should be carried on in a similar way with numbers from ten to one hundred; one hundred being the next natural stopping-place. The character representing the number should now be taught with the number itself. It is now necessary to develop the local value of figures as distinguished from their absolute value. In developing the idea of numbers as far as one hundred with visible objects, the number *ten* should be employed as a means of classification and as a help both to the eye and to the mind in the comprehension of higher numbers. At this time, after teaching the number *ten*, it is well to omit its numerical expression until *eleven*, *twelve*, and *thirteen* have been considered and their expression in figures taught, for the reason that it is easier to develop the idea of a significant figure in units-place than of zero. The children should be led to see and to state that eleven consists of one ten and one unit; twelve consists of one ten and two units; thirteen consists of one ten and three units. When the children understand this they will readily see the reason for writing one in tens-place and zero in units-place to express the number 10.

Operations in addition, subtraction, multiplication, and division should be taught with each number the same as before; as the numbers increase greater variety in drill can be introduced. Work similar to the following may be given: $(2\times 6)+(4\times 5)\div 8=?$ Regular tables in multiplication and division should be formed as soon as numbers have been considered as far as one hundred. Each number should be used practically as soon as it is learned and much variety can be introduced in this way. The consideration of different coins of money under their respective numbers, the number of days

in a week or month; the number of months in the year; the number of ones in a dozen, etc. Too much of this work in practical application cannot be given, for in life there is no arithmetic but the practical, and the earlier the children becomer accustomed to the different forms of problems the better. As a rule, pupils in the higher grade of schools find more trouble in getting at the meaning of the words in a problem than in the mechanical handling of the number. Therefore this work is important in the primary grade, and without it many opportunities of cultivating originality of thought are lost.

It was stated in the beginning that to know a number really meant to know it also in its most simple relations to those numbers which are smaller than itself. But it is only the number itself, and its relations to those numbers, which are smaller than itself that are to be considered. That is, in considering the number 10 it is compared with all numbers below 10, but all addition of tens or multiplications with ten as a factor, and any work which necessitates a knowledge of any numbers greater than ten must be omitted until the higher numbers have been learned.

During the second year this work in addition, subtraction, multiplication, and division, does not necessarily include the teaching of the mechanical arrangement of the numbers which is necessary in written arithmetic; in adding $20+20$ the children should say, 2 tens and 2 tens are 4 tens or forty. Work with numbers as far as 100 is fully enough to occupy the second year of school. This allows half an hour for oral work and half an hour for written work each day. When a child has learned the value of numbers as far as one hundred and the relations of those numbers and the operations on them, he has learned practically the relations of all numbers, for the relations of large numbers to each other are the same as the relations of their elements.

The number-work in the third year should include the consideration of numbers as far as one million. The lessons proceed on a plan similar to that used in the two preceding years but the work necessarily loses much of its objective character, and appeals directly to memory and reason. In dealing with large numbers the reasoning must, of course, be done by analogy. If the elementary work is thoroughly done, the work with large numbers can be done very rapidly. Numbers as far as one million should be completed in the first half of the third year. Written work should always be combined with oral, and practical problems should be given every day. The remainder of the third year should be devoted to teaching, objectively, such common and important denominate tables as have not already

been taught in object-lessons; that is, tables of money, weight, measures, and time. Simple reductions under each of these can be easily given, as, "How many quarts in three pints?" "How many weeks in thirty days?" etc.

The entire fourth year should be devoted to practical work, both oral and written, in addition, subtraction, multiplication, and division. The usual definitions should be taught and proper analyses required for all operations. If the work of the previous years is carried out as it should be, there is no difficulty in accomplishing this amount of work in the fourth year. This work that is done here must be done once and for all; not so done that it must be reviewed every year in the grammar school in order to make thorough scholars. During the fourth year the proper expression for dollars and cents should be taught and problems should be given which will necessitate the use of these expressions. During this year a text-book should be introduced, but used judiciously. We would give, then, as the order of work in arithmetic for a primary course:

First Year, Object-lessons on numbers from one to ten, teaching all relations of those numbers, using objects first and figures afterward, and applying each number practically as soon as it is learned.

Second Year, Similar work with numbers from ten to one hundred.

Third Year, Less objective and more rapid work with numbers from one hundred to one million. Denominate tables and simple reductions under the same.

Fourth Year, Numeration, addition, subtraction, multiplication, and division, simple concise definitions and analyses.

Each lesson in arithmetic, as well as each lesson in any subject, must be a language-lesson also. This is absolutely necessary to correct teaching. In this subject, unless for an occasional lesson in rapid drill, the children should be required to answer in complete sentences, to speak clearly, distinctly, and to express their ideas concisely. As long as the language for the number is not perfect the knowledge of the number is defective. An example is not finished when the result has been obtained, but only when it has been obtained in the right way. A lengthy explanation should not be required, for in that case it too often happens that in the multiplication of *words*, *ideas* are lost, and one extreme is as bad as the other. But language is the only means a teacher has of ascertaining whether the child has mastered the subject or not. If a child requires help it should be given by means of *proper* questions,—not questions that will tell him half of the answer he is expected to give, but questions that will start his thoughts in the right direction and lead him out

of the maze of perplexity where *reason* is not strong enough to see the way clear. A teacher who understands the art of questioning is never afraid of helping a child too much in this way. It is the only way to help him to help himself, and "What is the teacher for but to teach?"

The principal points which have been kept in view in the above order of studies are the laws of nature in regard to the development of a child's mind and the necessities of children in primary schools. Some subjects have been omitted which are usually given in a course of study. These subjects have been omitted for the reason that work can be done more thoroughly with a few subjects than with many. "Whatever is worth doing at all is worth doing well," and if too many subjects are introduced the work is not done well because it is not thoroughly done. And as stated at the outset, the aim of this work should be to do all that is possible in fitting the average boy and girl, morally, mentally, and physically for the requirements of everyday life. In the miscellaneous lessons, subjects are introduced which will cultivate a love of the true and the beautiful, but the work is none the less thoroughly done. Variety is introduced, and the importance of this variety cannot be over-estimated. No matter how pleasant a subject is, children will become tired of it, but a lively interest can be kept up by changing the subjects in the manner indicated. These lessons are also a direct help in reading, writing, spelling, and arithmetic.

The subject of drawing has been considered only in connection with lessons in form. Drawing is the natural outgrowth and the practical application of these lessons, and should be taught in connection with them. The time has come when a knowledge of the elements of drawing is very important. But if the work is properly planned and managed all the drawing that is necessary in a primary school can be done in connection with miscellaneous lessons.

In the regular course music was omitted also. Not that we consider any school complete without music, for we do not. School exercises should begin and end with singing. Any teacher knows the good moral influence, rest, and recreation which are derived from music. But all this pleasure and benefit are independent of any knowledge which the children possess of the theory of music. Music, in a primary school, should be taught on a plan similar to that followed in teaching language. Vocal culture, and the training of the ear, should precede a knowledge of notes and of the science of music, just as in language we teach the child to talk but keep the rules of grammar for by-and-by. Their little songs may be some

of the finest airs that were ever written; the finer the better, but rote-singing is enough to attempt in a primary school.

A more extended knowledge of music and drawing than has been here recommended is very well if it were equally safe to recommend it. But the advisability of putting music and drawing on the daily program of a primary school as subjects of equal importance with reading and writing is, at least, questionable.

Physical exercises should be given regularly. These will improve and rest the children and give opportunity for a change of air. These exercises should be pleasant ones, such as children can and will enjoy, and such as will give the school a good appearance. Good language, good manners, and good morals should be a part of every lesson, and should be constantly practised by both teacher and pupils. These, none are too low to appreciate and none too elevated to practice; and these, beyond all other things should be a part of a primary education. It is only in this way that harmony of feeling can be secured and true education made possible, for true education has to do with the heart as well as with the head and hand.

We said in the beginning that the first necessary element in a true order of studies was a true teacher. It is no small responsibility to take the care of a school of little children even for a few hours a day. They who know what real instruction is know also that there is no more difficult teaching in the world than to teach a little child to read. Then, if these children were all bright, clean, and lovable it would be charming work after all; but many of them are not interesting, not even clean and wholesome in appearance, and with very few ideas of good manners; yet the greater their need, so much greater is the teacher's responsibility. Michael Angelo, in his artist soul, saw the angel even in the unhewn marble, and longed to set it free. In like manner the true teacher must see in each little one the Master's image in the great gifts of memory, free-will, and understanding, and must do all in her power to train these faculties in the right direction. A fault of omission here is quite as great as a fault committed. Not only must the wrong be remedied but principles of right must be inculcated.

Our colleges are very important, and our country is and may well be proud of its old and honored institutions of learning. Their professors are selected with care and are regarded as learned and able men. But very little is said about our primary schools and less about the primary teachers; yet who can say that the influence of the primary teacher is not wider than that of any college professor in the land? Her influence reaches a far greater number, and be that

influence what it may, it can only be measured by Him who knows "what earth needs from earth's lowest creature," for

> "No star ever
> Rose and set without influence somewhere;
> No stream from its source
> Flows seaward, how lonely soever its course,
> But what some land is gladdened.
> No life
> Can be pure in its purpose
> And strong in its strife,
> And all life not be purer and stronger thereby."

THE PRONUNCIATION OF LATIN.

BY SAMUEL THURBER.

"Ex quo mihi inter virtutes grammatici habebitur aliqua nescire."—*Quintilian.*

It is interesting to note that in the universities and gymnasia of Germany the pronunciation of Latin generally continues to be the traditional one. The Germans themselves do not seem to live up to the light which they are discovering and imparting to the world. This conservatism in practice, existing side by side with great energy in research, may perhaps be partly explained by the fact that the custom of Latin speech is more general among the Germans than with us, and that thus a more deeply-rooted habit has been formed from which it is harder to break away. But I imagine that the apparent anomaly is not thus quite explained. The Germans do not cultivate the study of Latin sounds for practical ends. They have not in view the formation of an art of Latin pronunciation. They are at work at the science of Latin archæology in all its departments, and show, therefore, the zeal of investigators, but not the haste of reformers. Thus their pedagogy preserves the even tenor of its way, while their activity in all departments of philology keeps the world of scholars in their debt.

The study of Latin phonology seems to have a special fascination for American teachers, doubtless for the very reason that it seemed to furnish the data for a new departure in practice. But this special branch of archaic research has not been thus specially cultivated in Germany. In fact, the whole archæological field is so wide that this little department of it is relatively unimportant. There is much doing, and yet to be done, in ancient art, law, government, literature, and many other fields, as well as in phonetics. But because we are compelled every day to utter Latin words in some form or other, we are constantly held up to the phonetic question, and are forced to take sides on it either as progressives or conservatives. No such constraint holds us to the study of ancient law, ancient religion, and ancient civil administration. But I venture the opinion that the literatures of these departments are far richer in themselves and far better digested for our use, and that they touch our work as teachers of Cicero and Vergil at a greater number of important points than do phonetics and rhythmics combined.

The publication by a great university of a request to teachers to pronounce Latin in a certain way, lent to this pronunciation an advantage of prescription which interfered with an estimation of its value as a scientific finality. No German university or professor can be conceived as doing this. Certainly the body of German teachers cannot be conceived as altering the fashion of their pronunciation on such an invitation. The man who is both a trained pedagogue and a trained scholar,—and, speaking generally, it may be said that such is the type of the German gymnasial teacher,—scrupulously guards his pedagogy against undue influence from his speculations as an investigator. For instance, with regard to Latin sounds, the teacher, as scientist, simply aims to know how the Romans spoke at given times and in given places. But as teacher, facing the question how he shall train his boys and girls to pronounce their Latin, he must decide on grounds of pedagogy. His first qualification as a teacher is a recognition of the principles of his art and skill in applying them in practice. Better by far to have but little knowledge of phonetics than to mingle unwisely any knowledge of phonetics in one's methods. A class of teachers sure of their art, its principles and its practice, would have received the invitation of Harvard College to change their pronunciation of Latin as a first overture and suggestion to themselves to consider what, in view of all the circumstances and limitations of the case, best known to themselves, would be the bearings upon their own methods, processes, and results of a full acceptance of the invitation. When certain conclusions concerning Latin sounds are given to teachers in the form of rules to govern their practice, the teachers should ask,—Is this all; is this final; can you give us the information needed to enable us to use the rules?

When, eleven years ago, fresh from a too cursory study of Corssen, I read a paper on this subject, I conceived the question of Latin phonology as a very simple matter. The new pronunciation seemed easy, and settled forever. The rules for it,—as it about that time began to figure in the grammars,—were much briefer and simpler than the rules for the old pronunciation; so that I even fancied that in discarding the old and adopting the new we should not only attain phonetic truth in our practice, but should even relieve ourselves of a considerable burden. My opinions on the question at present are much more temperate. Phonetic truth still, on the whole, eludes our grasp, though portions of it seem to have been caught and secured against dispute; and the burden and difficulty no longer seem to me wholly on the side of the old pronunciation.

The distinction between the quantity of the vowel and the quantity

of the syllable has always been insisted on by grammarians. The elder Vossius, two centuries or more ago, describes it with reference to vowels in position as clearly as it has been done by any phonologist within the last decade. Only the importation of it into pedagogy is novel and recent. The subject is an intensely interesting one to study, as all who have read Ritschl's article in the *Rheinisches Museum* of 1876 well know.

The question, as it confronts the pedagogue to-day, is as follows: Every vowel in Latin is two, just as in Greek ο and ω, ε and η are two. But the Romans used only single characters for both the short vowel and the long; and the distinguishing marks which, in early times, they employed went out of fashion so soon that they have not come down to us except in the comparatively small number of cases where they have been preserved in inscriptions. Thus, where verse fails to inform us, as it always does in the case of vowels in position, we are left in ignorance of an element of the vowel absolutely indispensable to its true pronunciation. The philologists, indeed, by various shifts, which it is extremely interesting to follow, but which form no part whatever of any pedagogic question, are gradually picking up these lost quantities. Ritschl himself, indeed, whose article just cited is in the nature of an exhortation that we should respect all the quantities that we know, gives us no hope that they will all be recovered. There is no hope, even, that all such quantities in common words will be unearthed. The sources of such knowledge are precarious, vague, and illusory. Hence, perhaps, the very charm to the scientist of the pursuit. The chance of finding vowels cut in inscriptions a little longer than the contiguous letters, or of finding vowels doubled, or with an *apex* over them, or of being able to infer with certainty the quantity of the vowel from some cognate Greek or Sanscrit root, or from a Greek transcription, is, as Ritschl says, not to be counted on to supply us with all we need. Even when vowels are found in inscriptions, the apparent data are sometimes contradictory.

This is the natural and healthy condition of a *science*. Whether pedagogy can afford to have entangling alliances with a subject so inchoate, is the question. I do not mean merely to say that there is a fatal incongruity in devising some way for pronouncing decidedly the vowels whose quantities we know, and provisionally the vowels yet doubtful. I am thinking rather of this aspect of the matter,—that vowels having just the same form to the eye and just the same apparent relation to other letters, and bearing no distinctive marks except the conventional, modern, non-Roman long and short

signs, and never revealing their character as to quantity, even in Ovid or Vergil, must be laboriously learned in different ways by beginners, without a single practical advantage, and with no advantage whatever except the fanciful one that we are making our Latin approximate, perhaps, the Roman sound.

A good illustration of the way in which the archæologist strives to bring to life again the vanished quantities of vowels in position is seen in Lachmann's attempt to make a rule for such vowels in the supine stems of verbs by means of deductions from certain statements of Aulus Gellius. Roby quotes this rule of Lachmann in a foot-note, and apparently marks certain quantities in his grammar in accordance with it. So, also, does Harkness, but with the further light derived from the articles above cited of Ritschl, and from other sources also. It is easy to go to Aulus Gellius and to judge for one's self how well-founded are Lachmann's deductions. Ritschl himself denies their validity. Lachmann's attempt to make a rule was a perfectly legitimate tentative in the interests of science. Altogether unprofessional would be the adoption of such a principle to govern the practice of classical teaching.

I will cite one more instance of the way in which the latent quantities are detected. According to Lachmann's rule, the *o* in *doctus*, participle of *dŏceo*, would be short, as the *i* in *dĭctus* and the *u* in *dŭctus*. But Schöll, a diligent investigator in this department, as cited by Ritschl, finds in Marcianus Capella, a grammarian of the end of the fifth century, an observation that may possibly be interpreted as settling the quantity of this vowel the other way. Capella shows that the adverb of *doctus*, namely *docte*, in which the final *e* is long, cannot for that reason be a properispome, but must be a paroxytone. This settles the *o* in *doctus* to be an *omega* and not an *omikron*.

Such are the sources from which our knowledge of the quantity of vowels in position must largely be derived. It is our duty to weigh the value of such testimony before we venture to assume to know any quantities. But it is a more serious duty still to consider well how much such knowledge, even when it is most firmly substantiated, we have a right to include within the range of our teaching.

It is worth while to note that Ritschl, insisting on a recognition of established quantities, expresses himself as comparatively indifferent to some other points, which would seem to us all-important, as the sound of *c* and *t*. The scheme of so-called Roman pronunciation evidently does not shape itself in his mind as an organic unity. I think in this country the unvarying guttural sound of *c* would generally be regarded as one of the vital elements of the Roman pronunci

ation. As to the sound of this letter in Latin, I believe that phonologists to-day are nearly agreed that in the classic period, and at least in the city, it was uniformly that of English *k*. The question when sibilation began, where it began, and in what class of people, is, however, still discussed. Wilhelm Neuman, in 1873, devoted a monograph of eighty pages to a collation of the evidence in the case, and concluded plumply not only that the Romans had not always pronouuced *skiskere, Kikero, deskendere, fakit*, etc., but that they never so pronounced. I cite this writer, not because of any special value attaching to his opinion, but simply to show that even in regard to the letter *c* the question of its sound is still open. This means merely that a scholar, in pure loyalty to the truth and to the method of science, and not at all as an obstructionist and a lover of darkness, may yet delay to change his habits of Latin pronunciation.

But to return to our vowels. Suppose we know whether they are long or short,—are we sure that we know what to do with this quantity? Are we competent to render it in actual speech? Do we know precisely *what* is long and *what* is short? That is, do we know the *nature* or the *quality* of the sound which is to be made long or short? Are we sure that the terms *long* and *short* mean strictly *more* and *less*, a greater continuance or a less continuance, of the same sound? For if we are going to reform our actual pronunciation, these are crucial questions. The old pronunciation of Latin was a convenient, or, if you will, an inconvenient, fiction. But if the new is founded on assumptions, is it not worse than the old? A work of fiction, pure and simple, is a good thing. But a historical romance that confusedly mingles history and fiction is a nuisance.

The most difficult sounds for a foreigner to utter in French and Italian are those of *e* and *o*. For these letters are as distinctly double in these languages as they are in Greek. The accents help in French, but Italian print leaves us as helpless as does Latin print. In English, of course, there are very many *e*'s and *o*'s. But the broad distinction of *open* and *close*,—to let alone finer shades,—which we know so well in modern languages, inevitably confronts us in Latin with a question that must be settled.

Roby prescribes for both long and short *e* and *o* the open sounds, the long being merely more protracted than the short. Harkness gives, in the case of *e*, the close sound for the long and the open sound for the short; and in the case of *o* the close sound for both, the long being merely more protracted than the short. The discrepancy between these two foremost authorities only illustrates the differences among the grammars generally. I need not quote more.

The differences simply prove that the historical sounds of these vowels are unknown. The writers of these books *assume* them. Usually they do not give the grounds of their assumptions. If the truth in regard to Latin sounds were all so clearly demonstrated that no candid scholar could possibly doubt a single element of it,—that is, if *science* had achieved its task in the matter, which, however, is not thinkable,—the pedagogic question would still be an open one.

Nor is the question between the open and close sounds of *e* and *o* unimportant. No student of French will allow for a moment that it is unimportant. We used to pronounce the Latin negative particle *nòn*. I hear it now pronouced *nôn*. Why this change? Is there any better ground for it than that it conforms to the prescription of some grammarian, like Harkness? It certainly violates the rules of other grammarians, like Roby. Is *nôn* longer than *nòn?* Time them and see. Doubtless the trouble is that certain prepossessions derived from the English dictionaries still dominate our thought in the matter. We have been accustomed, in dictionary and spelling-book, to see the sound of *o* in *not* marked and called short, and that of *o* in *note* marked and called long. But these are merely conventional names. It is great heedlessness to carry them into Latin phonetics and make them do duty there as identical with the Latin long and short. This is merely one of the *naif* anachronisms that persist in creeping into the semi-historical romance which our zealous reformers are constructing. *Nòn*,—open sound,—can be made as long as is desired; and *nôn*,—closed sound,—can be made as short as you will.

A very interesting attempt has been made within a year to settle on grounds of evidence the *nature* or *quality* of the vowel-sounds in Latin. If the attempt is really to be made to revive the Latin sounds, of course the *quale* no less than the *quantum* of the sounds in question must be determined. The monograph of Martin Schweisthal on the *Phonetic Values of the Latin Alphabet* appeared less than a year ago. It is an attempt to deduce the Latin sounds from the teachings of grammarians, some of whom make elaborate statements on the subject. These statements, sometimes in verse, are obscure and of uncertain authority. The difficulty of interpreting them is increased by the fact that the various writers seem not always to agree. But Schweisthal arrives at conclusions, and seems to have made a genuine contribution to Latin phonetics I will premise that he strongly desires to effect a reform in the pronunciation of Latin. Doubtless he would call his pronunciation "Roman;" but as it differs from other "Roman" pronunciations, it needs a dis-

tinguishing epithet, and may therefore be specified as the Schweisthal-Roman pronunciation. I can here only give his conclusions.

With regard the *o*, however, I must ask your forbearance while I give the process also:

"The Greeks had two letters for *o*, *ὂ μικρόν* and *ὦ μέγα*. The Latin grammarians, who imitated the Greeks as servilely as possible, naturally sought to introduce the same distinction into Latin grammar. Terentianus, after having established the existence of the two *o*'s corresponding to the two Greek letters, goes on in the following fashion: 'So when you shall wish to utter the sound of the lesser, hold your tongue pressed moderately back, and it will be enough for your lips to be open a not great space. But the longer one, wrought with lips rotund, sharpens its tragic sound beneath the lofty cave of the mouth.'

"This explanation is adopted by several other writers. '*O* long,' says the commentary of Pompeius, 'resounds in the interior of the vault of the palate, but *o* short is pronounced with the tips of the lips.' And Servius adds, '*O* long is pronounced with the mouth wide open,—'*sublato ore*,—*Rōma*; while *o* short is pronounced with the lips,—*rŏsa*."

"We fear," I am still quoting Schweisthal, "that just a little bit of imagination entered into Terentian's description, and that the 'tragic sound' did not appreciably differ from the other except by accent and quantity. The two other grammarians have probably merely copied him, as often happens. For we know with what facility the ancients, both in the arts and in literature and grammar, appropriated each other's property. It was enough that a subtlety, or often even a manifest error, should be expressed by some writer of fame, for it to be religiously preserved and sometimes amplified by his disciples and imitators."

"We oppose to these assertions another passage of Terentianus: '*ŏ* and *ō* seem to be neighbors to each other; the movements of their times differ, not the nativity of the sound.' This passage seems much more precise, much more worthy of confidence. Nevertheless, it seems that we may admit a shade of difference of pronunciation between the short and the long *o*. It is probable that the long was a little more open, inclining towards *a*, while *o* short, being close, pronounced with the extremities of the lips, was more akin to *ŭ*."

Having reached this conclusion, Schweisthal goes on to fortify it with other arguments, and really makes out a very strong case. According to Harkness, therefore, we should say *nôn*, to rhyme with *bone*; according to Schweisthal, *nòn*, to rhyme with *on*; with the former, *cognôsco*: with the latter, *cognòsco*; with the former, *ôs*, a bone; with the latter, the same: with the former, *ôs*, a mouth; with the latter, *òs*: with Harkness, *dôctus*, with Schweisthal, *dòctus*, if we believe this *o* to be long; if we believe it short, the two sounds

are nearly alike. The yet remaining possible case, that we do not pretend to know the quantity of the *o*, is too dreadful to contemplate. With Harkness we should say *fôdio, fôdere, fôdi;* with Schweisthal, *fôdio, fôdere, fodi.* With the supine our case is worse, for here we do not know the quantity of our *o*. We do not know the quantity, and should not know what to do with it if we did. This is *the* Roman pronounciation. In his choice of a key-word to represent the sound of short *o*, Harkness is singularly unfortunate. Like some other grammarians, he gives a word that has its *o* in an unaccented syllable, where it is obscure and uncertain. If any one thinks that the *o* in the word "obey" clearly conveys a sound that can be carried successfully into an accented syllable, as in *mŏnet*, let him note that scholars no less illustrious than A. Baskerville and Gustav Fischer, listening with trained ear to the pronunciation of English, fancy that they hear the same sound for the *o* in "obey," the *a* in "immediate," the *a* in "imperial," the first *e* in "precede," both the *u* and the *o* in "superior," etc., etc. This is absurd enough. I adduce it to illustrate the elusive, fugitive nature of unaccented sounds, and the futility of trying to convey sharp distinctions by means of them.

I do not understand how the grammars,—as, *e. g.*, Harkness,—reconcile their statements that "in theory the short vowels have the same sound as the corresponding long vowels, but occupy only half as much time in utterance," with their key-words, which frequently exhibit a difference of quality with perhaps no difference of quantity whatever. That scholars of repute should carry over into Latin not only the English words *long* and *short*, as they must, but the values also which these words have in English schemes of pronunciation, is incredible. Harkness gives the words "they" and "fate" as representing the long sound of *e*, and the word "met" as exhibiting the short sound. Schweisthal comes to precisely the same conclusions with regard to *e* as Harkness. But while Harkness reaches these conclusions by way of the theory that the long and the short are exactly alike except in duration, Schweisthal reaches it as an inference from the hypothesis that the sounds differ in their nature. Phonology is plainly not an exact science. The very meanings of the words "long" and "short" need settlement. But as to *e*, Schweisthal's position is by no means a mere hypothesis. He quotes the grammarians abundantly as saying, in the most explicit and unmistakable language, that long *e* sounds in one way and short *e* in another. Whence came into our rules for Latin sounds the assumption that the vowels differ, as to long and short, only in duration? Can the intricacies of Latin phonetics be solved in such an arbitrary way?

The letter *a*, according to Priscian, had, when short, four different sounds; and when long, six. Of course it transcends all imaginable phonetic subtlety to reproduce these sounds. But in view of such plain assertions by the ancients, how can any modern affirm that these differed not in the quality, but only in the duration, of the sound?

Even the vowel *i* was not, apparently, always of the same nature. Schweisthal's *résumé* of the evidence in regard to it is as follows: "When *i* is consonant it is pronounced like the German *j*, and is resolved between two vowels. When it is a vowel it has its ordinary sound, although in the Roman popular language *i* long often approximated the diphthong *ei*; and *i* short, the *e* called by the French *e moyen*."

Concerning thesound of the consonant *v*, Schweisthal, after a thorough sifting of the evidence, concludes, without misgiving, thus: "It is no longer possible to entertain a doubt as to the pronunciation of *v*, which in spite of Corssen's assertion is everywhere pronounced like the French *v*." As I do not by any means appear as an advocate of any "Roman" manner of pronouncing Latin, but am only trying to show the futility of calling any pronunciation whatever Roman, I cannot help recalling the very conclusive proofs by which it has been shown that *v must* have been an English *w*. Were it not that Latin words must, as an actual and present fact, be spoken by us when next we call a Latin class, and were it not that we have an ambition to be in all the new light and fully abreast of the times, we should be able perhaps to look disinterestedly upon this quarrel of the phonologists, as we do upon the speculations about the nebular theory,

I must speak of only one or two more letters, and bring this paper to a close. The diphthong *æ*, our author concludes, had the sound of the French *very open e; père, sexe.*

Final *m* Schweisthal would have us make nasal. To a French-speaking person this would be easy. That a final *m* before a vowel in verse creates hiatus seems reason enough for doing something about it, to make our phonetic scheme complete. The author gives some lines from Vergil and Horace, annotating them as he would have them read, and insisting that all the final *m*'s be nasalized. Will not some enterprising teacher adopt this new ornament? There is fully sufficient authority.

Whether final *d* was pronounced like *t* our author considers with great care and at unusual length. His conclusion is somewhat startling. The genuine Roman *d*, he maintains, had everywhere the

value of the English *th* soft, as in *father, then.* In the other Latin dialects it was sounded like modern *d.* He nowhere allows it the sound of *t.*

My purpose in offering such a paper as this will not have been misunderstood. I have tried to show the very great difficulty of reconstituting *the* Roman pronunciation of Latin. I believe it to be impossible to command the assent of different investigators in Latin phonetics to any one scheme of pronunciation as an adequate reproduction of the sounds heard in Rome in the classical period. Some pronunciation different from the traditional English one might be devised that might receive the approval of many teachers. But such a pronunciation should seek a name for itself more honest than "Roman." When provided with a modest name, that should not impose upon simple and credulous people, such a pronunciation might ask to be heard as to the pedagogic advantages which it had to offer. And this would be the test of its merits, by which it should stand or fall, as a claimant for admission into schools. A wise pedagogy remains on its guard against wanton innovations. The new and untried applicants for admission to the schools are many. They should be strictly held to make good their claims, lest we commit the error of admitting them on pleas more specious than sound.

To count up the colleges and schools that have adopted something called the Roman pronunciation does not give us a better warrant that the pronunciation is Roman. Considering the diversity of opinion as to what *is* the Roman pronunciation, it is essential, when you hear that a college has adopted a pronunciation under that name, to know after all *whose* Roman pronunciation it is. How it pronounces *c, e, o, d, m, v,* still remains to be known. It is a matter of partisanship and personal preference. One teacher thinks he will trust the Harvard Catalogue and spare himself all further inquiry. Another will stand by this grammar or that, or will follow the example of this or that school. Another plants himself on the last results of German research; and as new last results come over from time to time, modifies his practice accordingly.

A teacher of English literature is confronted with the question, how he will pronounce Chaucer. He will be derelict, I submit, if he does not ascertain what Ellis has offered in the way of speculation as to what the fourteenth century pronunciation of English was. He will even make his recitations interesting by trying his own vocal organs on the Chaucerian sounds. But I should hope he would not call his interesting archaic elocution *Fourteenth-century English* without further qualification. Even if he knows as much as Ellis and all the Chaucer society, he does not know so much as that.

The attempt to *speak* Latin in the Ciceronian manner has but small pedagogic value. The attempt to *write* or *compose* Latin in the Ciceronian manner, on the contrary, has the very greatest peda gogic value. To reproduce the Latin sounds is analogous to reproducing Latin letters and Latin punctuation, as we see them in the inscriptions. These are the external, physical, unessential elements; so is the form of speech, in the phonic sense, a physical, external, unessential element, within the range of the modern uses of Latin. The Ciceronian *style* is internal, essential, spiritual. To this the pedagogy of centuries has paid homage. To study this is to study humanity itself. But any modern revival of the Latin sounds must be mere bric-à-brac; and that, too, not good bric-à-brac, like vases, coins, and figurines, but of doubtful authenticity.

For myself, I am very exacting about the pronunciation of French. For close at hand are monsieur and madame, Littré, LeSaint, and the Academy. Here something positive and useful can be attained. On the sounds of French a much-needed training in phonetics can successfully be imparted. And here is the joy of acquisition, as every chance Frenchman whom the pupil meets enables him to feel. But as to Latin, my sole ambition is that the phonetic element of my method be simply such as to burden my pupils the least, whether that confessedly violates or pretendedly follows the sounds of the ancient Latin.

MOTHERS AS EDUCATORS.

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II. — The Work.

What does the parent owe to the child? This question comes home with irresistible force to the thoughtful mother. It is a question which must be answered practically and without delay. It cannot be put off or laid aside; the deepest responsibility,—the highest rewards,—the severest condemnation,—the most terrible penalties are involved. Those whose philosophy has room for favorable views of humanity may well dwell upon the fact that, in a general way, we all wish to do well by our children. Even they who fail most disastrously are seldom wanting in good intentions. The present distribution of duties gives to the mother, in most cases, by far the larger share of personal contact, and therefore of opportunities of immediate usefulness to the child. Who can estimate the power of personal influence? The silent force of the mother's life; the mysterious capability which exists of feeding the hidden springs of the child's nature; the power she exerts over the "unconscious cerebration" which is to build up the very foundations of his character and influence as a man, and decide his value to his own day and generation; these are very real and sacred things. In the midst of active life men do not have time to brood over these questions as women must and do. In the round of home-life, in its quiet hours, its more sedentary occupations, the mother is continually dwelling upon them. She studies the slight but tell-tale indications which express the real dispositions and give a clue to the true needs of the child's nature. She sees each little idiosyncrasy; she shelters every sensitive seedling of virtuous and lovely growth; checks and seeks to uproot each poisonous weed. How peculiarly womanly is this quiet yet most important work,—this gentle yet most commanding influence. And is any wisdom, any insight, any largeness of view, too much for its daily guidance?

The serious question of the entire scheme of a boy's or girl's education seldom meets with the deliberate consideration and discussion to which it is entitled. With our American modes of thinking and extreme fluidity of circumstances, it is rarely decided upon at the outset, or as a whole. We live from hand to mouth, another year we may do better,—we shall see! In this land, where all employments

are open, all trusts possible to every boy ; where no bar exists to keep the way closed to any, however humbly born, who develops fitness for far-reaching work, the parent cannot resist the feeling that as there is scarcely any limit to the possible career of the child, so the best education is practically limitless. Nothing is farther from the wish of the average parent than that the child's future should be fixed by his training. There is, undoubtedly, a certain truth in this view, and at the same time the importance of a definite aim in education cannot be over-estimated. The spirit of a large and universal education may well be cultivated, but all the details must be positive. But ought not a condition so grand, so hopeful, to make men of a stature heretofore unknown ? What fine and rich development ought we not to expect, to propose, for the boys and the girls who are to be the men and women of this all-possessing republic ? What large views of life, what noble conceptions of free institutions and of social progress should be theirs ! What wise and devoted statesmanship may we not expect ; what universal humanity, honesty, and generosity ! But, ah ! the selfish tendencies of the human heart form a centripetal bond which will always keep the great body of men bound down to dull earth. There is small chance that the warm enthusiasm of woman, were woman much more powerful than she is, would ever outweigh the considerations of personal gains, personal safety, which will always hold back the rank and file of mankind from enterprises and designs too high or too ideal for the average comprehension and acceptation. It is chiefly in the line of material conquest and expansion that personal aggrandizement is to be found. It is, therefore, " a practical education " which is oftenest demanded. Into this channel some would turn the whole productive energy of the nation. The " practical education," the " fitting a boy for life," too often means giving him an exaggerated sense of the value of mere dexterity,—a conceit of " smartness "; contempt for men and things upon a plane infinitely above his own ; a supreme devotion to money as the one essential thing, both for power and for pleasure ; and a lack of moral fibre, the story of which may be read in the defalcations, the betrayal of trusts, the social scandals and tragedies of every newspaper one takes up. The desire for self-aggrandizement makes " dirty " politics ; it is the cause of social ostentation, vulgarity, and meagerness ; it brings upon us the corruption in high places which stains even the judicial ermine, and strikes at the very foundations of all true honor, in the base conceptions which it sets up both in Church and State. Shall we offer our children these stones in place of bread ?

Within the limits of the parents' ability, the child may justly claim a right to the fullest opportunities of individual development which the combined wisdom of mankind offers. But in the paths of actual life, the parents who can see the largest possibilities of education are not too many; out of these, the proportion of those who can command the resources, in time and money, requisite to the most liberal advantages of technical education is small. Few men are able to give their sons, by eclectic privileges, the freedom of all the universities, or to put in their way the highest formative and professional opportunities of the world.

What can mothers do? Not this, indeed, in most cases; but perhaps something not less important. It is for the enlightened mother to nourish and preserve in sons and daughters their own birthright,—the impulse toward a broad, beneficent, and joyous life; the quick apprehension, the ready powers of assimilation, the generous will; it is for her to inculcate and strengthen the broad and right views of life, which shall give direction to all that the boy may himself gain. In truth, he gets his *own* best education. For us all, what we get from actual, responsible existence is worth vastly more than anything that we have simply taken at second-hand. It is attrition with the forces around us,—action and re-action,—of self and environment that matures character and power.

Do not parents sometimes seem to think that in providing schools "as good as they can afford" their responsibility ends? Delegated authority is never safe without supervision. Whenever work, and especially work of such delicacy and importance, is placed in the hands of others, common prudence dictates the most scrupulous oversight. What business-man would place money-matters of grave importance in the hands of an agent, and leave him entirely free and unquestioned in the exercise of his power? It is in matters of this character that woman's peculiar usefulness in public affairs may be shown, should she be placed in a position to bring her active influence to bear upon such questions. A highly educated woman will bring to moral questions which vitally concern the public good, the energy and strength of will which men are too apt to concentrate chiefly upon their own personal interests. The keen watchfulness and whole-hearted coöperation of parents would soon reform the abuses and correct the errors of the schools, and bring them to a degree of efficiency and excellence which teachers, unsustained and neglected, can never attain. The mother must not only be anxious for her child's school-welfare, but she must have an *intelligent knowledge* of what he is doing, and be able to compare it with a standard of her own.

How often the mother gives up her "accomplishments," her reading, her larger interests, such as they were in the somewhat crude and thoughtless years of her girlhood, and accepts as *duty* a lot which sinks her into a mere housewife. She thinks much of her children's health, of their palatable and wholesome food, of their pretty and becoming garments; but their minds, their souls, she turns over to their teachers, their pastors, and chance! What a fatal mistake! What a sad letting-down of the just relations of life! It seems to me that mothers, above all other men or women, need to keep in a *growing* condition. There is no more mistaken notion than the one that education can be *finished.* While life lasts, we are continually changing in mind and character. Either we go on building up, by the fruits of experience and thought, a richer and more fruitful personality, widening and deepening the sources of influence, and taking a stronger and stronger hold upon the things that make for our eternal peace; or, letting go that which we have already attained, and concentrating our whole attention upon things temporary and unessential, we harden more and more in a shell of dreary commonplace, and, grown "old and formal, fitted to a petty part," we become every year less capable of independent judgment, or of generous and high-minded action. Who can estimate the value to a child, of watchful care such as we have hinted at, exercised over his whole education and training? He brings every new intellectual gain, every fresh subject of interest, to one able to point out its just value, sure to sympathize and to share or to compare views and discuss bearings. What confidence is gained, what freedom in the use of mental acquisitions, and how heart is knit to heart by these close bonds of mutual interchange! The mother is never "old-fashioned" who keeps her sympathies warm with the new movements, the higher aspirations, the varying hopes of the next generation. The wisdom of her experience is never mouldy, in the fresh air of this new life. How secure is such a mother in her children! What delight she has in their victories, what joy in their happiness, what serene faith in their sorrows, what proud confidence in their adversities! Ah, can she ever grow old? Let who will build for fame, for riches, for personal advancement; we build for God and for the best interests of human life.

We have considered what the mother *must* do; let us look, also, at what she *may* do. Sometimes, from force of circumstances or of free choice, she decides to attempt a course of home-education, quite independent of the schools. In this attempt nothing will help her more than to form a clear idea of what she means to undertake, and

to map out her work definitely. Next, she must be inexorable in making all other engagements give way to this. Upon this shoal a great proportion of these little boats upset. If the child is to be taught at home, it must be positively decided that lessons are to take precedence of a thousand various pleas of pleasure or necessity. Frequent interruptions are simply fatal,—fatal both to the desired habits and the hoped-for results. With three hours daily of close attention to books, it is surprising how much may be accomplished with a family of children. Build well the underpinning. Let all elementary knowledge be clear, precise, and thorough. With absolute thoroughness, every inch gained is a possession for all time. Not only is it so much ground conquered, but it is so much advanced upon the *road*,—complete mastery of a few simple principles will enable the mind to approach more difficult problems without confusion, and will render achievements easy which to many are only accomplished at an immense outlay of stubborn drudgery. This must be strongly insisted upon, since home-teaching is naturally discursive and may easily be superficial. On the other hand, it cannot too often be said that the work of education is not a mere matter of drill in text-books. The freedom of comment and illustration, which in class-drill is difficult and almost impossible, should not only aid in imparting much general information, but promote breadth of view and power of individual judgment. Scholarship, to a degree of high technical excellence, may demand other aids; the teacher may be herself unable to go far in the sciences, in classical or linguistic studies, and yet she may be quite capable of imparting an education not to be despised.

To begin with the knowledge of English: that is, in itself, an almost inexhaustible study, and one that may be pursued to especial advantage in a home education. If I may trust the report of more than one college professor, who has assured me that young men enter college whose spelling is "disgraceful," this seems to be a study not generally followed with very great thoroughness, even in its elements. The habit may be formed, even with very young children, of looking at every word *critically*, which soon makes it impossible to mis-spell any ordinary word. There is no need, at home, of being satisfied with a dry and barren knowledge of grammar and etymology. The reading of leisure hours must all pay tribute to the teacher. Aim at a vital knowledge, a command of clear and flexible English for the student's own purposes. Discourage mere memorizing in the preparation of all lessons. Take the concise facts of the text-book and put them picturesquely, and in different lights.

Children taught in this manner will soon show an appreciative interest in the best literature, and will readily gain, with the appetite, a knowledge of the outlines, at least, of these inexhaustible stores. Let children get some knowledge of history, as a skeleton sketch of the story of man ; not a confused mass of disconnected fragments, but a coherent whole. They can fill out the various periods for themselves, in after-years, as time and taste serve, but the great salient points of the story, the chief epochs and figures, should early be made real and vivid for them.

Any attempt at education falls far short that does not give some intelligent notion of the great lines of human thought and endeavor. A little knowledge of the rudiments of a great science may be a good thing if the young person who possesses it understands fully the slightness of the acquisition,— that it merely gives entrance to a truth which to follow will take a life-time,—but she ought to be incapable of the flippant folly of such remarks as we sometimes hear: "Oh, I have *finished* chemistry, astronomy, geology!" Such acquirements as we have hinted at, with that knowledge of books which prepares one to use them, which makes a great library a storehouse of *tools;* these, helped by a sense of proportion which gives one a grasp upon facts and theories alike,—a capacity for fitting them into their places so that not one shall overshadow another or be lost in undue subordination ; such an education, modest indeed in its aims, but not without solid value, is easily attainable at home under the charge of an intelligent mother. If practical efficiency has been at the same time developed ; if the scholar has thought upon his own relations to the problems of support and usefulness, and has been almost unconsciously helped to find some channels, more or less swift, of honest, productive efforts, it will probably compare favorably with the usual routine.

ELEMENTARY COMPOSITION IN PRIMARY SCHOOLS.

BY MISS E. A. FANNING, NORWICH, CONN.

The teachers of the past erred in undervaluing the importance of composition, and in not recognizing fully, if at all, its relation to the other studies, however elementary, which they were teaching. As an inevitable result, from such mistaken ideas came delay and a total ignoring of the subject until, after a waste of the best years of school-life, the branch suddenly developed into importance and the scholar's mind was expected to furnish a complete edifice of rhetoric where no foundation of thought and expression, however simple, had ever been laid. Even here another mistake was made, not only in subjects given, but in the practice of enforcing reliance in, and withholding aid from, pupils who, lacking experience, could hope for the awakening, development, and proper expression of ideas, only from the suggestions of teachers, supplemented by the information to be gained from reference-books and from their own reading. What wonder, then, that composition became the bugbear of school-life!

The reason why the language-lesson may not be made one of the most important studies, as well as *the* most fascinating one, of the course has yet to be proved. It is certainly productive of vast benefit; since,—in the primary grade,—it is the only plain and certain test we have of the proficiency of pupils in independent writing and spelling. Every teacher knows that a pupil in the lower grades who may, perhaps, copy a set word or phrase with Chinese fidelity will be perfectly at sea,—so far as *correct* writing is concerned,—when bidden to write a paragraph unaided. As for teaching such children spelling by simple repetition of words, the result is about as satisfactory as was Penelope's web, of which as much was unraveled every night as had been spun during the day. If primary teachers wish to see any practical, satisfying results from their perplexing labor, day by day, they must commence by making copy-books and oral spelling of secondary importance.

Although we had been doing some desultory and tentative work in language in our primary course previous to the last year, it was not until then that the subject was given prominence in our scheme of study, as necessary and practicable. Even then I regarded it as a pleasant device for promoting interest and variety, rather than as the probable source of large benefit to my class. Up to that time the pupils had been writing simple descriptions of ordinary pictures.

But as nine out of ten of their slates would read: "I see a picture. I see a horse. I see a man. I see a dog by the man," I concluded to try a change. So I commenced to *draw* the subjects of their exercises, first letting them talk about the picture, which I took good care should be of some very familiar object. I prefer this of all plans which I have tried. It adds a thousandfold to the pleasure and interest of pupils to watch an outline,—however imperfect,—grow into shape before their eyes. There is a freshness, a newness, about it which never belongs to a printed picture. Occasionally, as time went on, they were permitted to write independently of pictures, their subject being some suggestive word written upon the board, as, "Christmas," or "Sliding." At other times they wrote entirely from memory; as recollections of stories which they had heard or read (but this, of course, was at best a limited field), or letters to their parents or to myself. In no case,—no matter what the scholar's rank in any other study,—did I ever discover *poverty* of ideas in the exercise. The first and most discouraging obstacle to success was spelling; the second, the inability of pupils to express their ideas rapidly and easily in writing. As a rule, children's fingers are rarely able to keep pace with their brains. And this is an end which can only be attained by patience on the teacher's part, and experience in writing and spelling, on theirs.

Whatever method of conducting the language-lesson I have chanced to select, whether by writing from ordinary pictures, from drawings independently of pictures, or from memory, I have always employed the same aids to spelling. My first plan was to draw the picture-subject, and to write its name both as the title of the little story and to insure proper capitals; then to write upon the board the principal and necessary words relating to the picture, numbering them as they were written. By this practice of copying, correct spelling was promoted, while the numbers saved time and trouble, since pupils might be instantly referred to the corresponding number when uncertain as to the spelling of a particular word. Then I have encouraged freedom of inquiry relative to the spelling of every uncertain word, both as an aid to the pupil who asks as well as to those who listen. Again, much good may be gained by encouraging reference to text-books, not only as insuring accuracy in copying and spelling, but in serving to keep the pupil's mind alive not alone to the *peculiarities* of new words which he learns, but to their position in the book,—to the very page, the line even, in which they occur. I fail to see why it is not quite as important for a primarian to develop a keen perception of relations in respect to the words of his reader as it will be for him, ten years hence, to see analogies in his

mental philosophy, or to recognize instantly a case of parallelism in his Æneid.

The fourth aid to spelling requires more time than the three preceding ones. My practice has been to divide a slip of paper by a line, upon one side of which the pupil writes the uncertain word, *always followed by a question-mark.* He comes to me without asking permission, and if his word is correct I return the paper without comment; if not, I write the correct form opposite his attempt. The name of each pupil is written upon his paper, which he keeps, drawing a line under the uncertain words of each lesson; which words he is afterward required to re-write correctly five or ten times, as the case may be, at odd moments of leisure.

Some one may suggest that all this takes time, and that, after all, learning to write stories is not of primary consideration in the education of mere infants. The very same objections have weighed heavily upon my own mind at times, and I have frequently hung out various small signals of warning to myself, fearing lest I might make this subject a harmless kind of hobby. How I got rid of my scruples was simple enough. There are sixteen pupils in my class whose ages average 7½. Now I am positive each pupil has spelled and read and seen the simple word "there," at the least calculation, fifty times. Yet day after day the word was written "t-h-e-i-r," or "t-h-a-r-e," and no amount of simple correction seemed equal to effect any improvement. One day in particular, one of the boys,—a smart, bright boy, too,—wrote, "Thare is a turtle on the board; A turtle *bees* in water." And I commenced to ask myself, "Is there any help for this thing? Is there any means of remedying these errors of spelling and language? True, experience would do the work, later on; but could not I anticipate the office of experience now, this year, this term even?" The question was, How could that particular boy be made to realize the errors of his sentences, in order to perceive and avoid them for the future? His experience of the uses and relations of those and all other words would necessarily be distributed thinly over a period of many years. Would it not be possible to gather up, to concentrate and compact, this experience into a single year? If so,—and I answered "Yes" to my questions,—by what so natural, simple, yet efficacious means as that of practice; of doing again and again, until at last thought and judgment would step in and take the work out of my hands? I saw at once that, to prove of the desired effect, the exercise must be done *frequently*, done *repeatedly*, and, as a consequence of limited time, done *with despatch.*

So, like Robinson Crusoe, "I put my mind upon thinking," and having considered the *pros* and *cons*, I decided to try an experiment.

So at the next lesson, having drawn the picture, I said, "Scholars, I want you to write me a story of eight lines; I shall call for it in fifteen minutes." I explained that this was exclusive of their names and ages and the title of the story. They set to work with an accession even of the delight which they always take in this exercise; and the stories were written and corrected inside of half-an-hour. Certainly a moderate allowance of time to devote to a language-lesson. This plan I have followed ever since, although I have reduced the acceptable least number of lines to six. Since that time I have found in general a steady improvement in economy of time, in writing and spelling, and in facility of expression. The practice of noting the lines helps them in paragraphing, as well as in determining the placing of capitals. Of course some of the class will attempt to slur their writing; while others, using a stenography of their own, will make a single word stand for a sentence. However, it is, perhaps, as natural for a child, hurrying on to the expression of his thought, to leave out all except the important words in writing, as it was for him in his earlier childhood to omit the copula and articles, and say,— intelligibly to himself and his hearers,—"Book pretty," or "Sugar sweet."

In order to cultivate *correct expression* of ideas I have made a practice of looking over the pupils' work during each exercise, and of causing each improper and ungrammatical sentence to be read aloud, in order to encourage careful work and *self*-criticism (children are always sufficiently venomous critics of each other). The most difficult habit to cultivate is that of looking back, of re-reading the work already written. But that of course will come with time. Such expressions as, "They are a picture on the board;" "My father give me a sled a Christmas;" "The teacher leave me take a purty book," occur, of course, in every lesson. But we cannot expect elegant English from the majority of pupils who daily hear such expressions as, "Johnny, git that air book o' yourn, and jest you make tracks for school!" or, "Mary Ann, if you spile your ruffled apron with ink, yo'll git the wus lickin' you ever had'n your life!"

As to corrections in *spelling*, sometimes pupils are simply required to re-write mis-spelled words ten or fifteen times; while in cases of very poor exercises the stories are entirely re-written.

My corrections are always made with colored ink; and, when practicable, each incorrect word is fully written out. Of course, even with the wisest application and economy of time, progress is comparatively slow, and days come when good results are almost imperceptible, and and there seems no resource but persevering, hopeful, prayerful patience.

Mr. Sprague was born at Sutton, Mass., Oct. 19, 1829. He fitted for college at Leicester (Mass.) Academy, under the tuition of Rev. Josiah Clark, and entered Yale College in 1848, resident at East Douglas, Mass. The first year after graduating he studied law in the Yale Law School; the next year in Worcester, Mass. In October, 1854, he was admitted to the bar in that city, and entered upon the practice of his profession. He accepted, in September, 1856, the position of Principal of the Worcester High School, which he held till January, 1860. In 1859 his *Fellowships of Slaveholders* was published and circulated in pamphlet form by the Pennsylvania Anti-Slavery Society. Soon after, he removed to New Haven, Conn., and for a few months had charge of the "Webster School" there. He then resumed the practice of law, but when the war began he engaged heartily in the enlistment of soldiers. In the summer of 1861 he enlisted about sixty men for a company, who elected him captain. Declining this office, he raised, the same year, another company, of which he became captain in the 13th Regt. Conn. Vols., and went with it to Louisiana. In April, 1863, he was wounded in the arm in the engagement at Irish Bend, La. In June he volunteered as one of the leaders of the "Forlorn Hope" for an assault on Port Hudson, which, however, proved unnecessary, and in November of that year he was promoted to be Major and then Lieut.-Col. of his regiment. He was afterward breveted Colonel for gallantry at Port Hudson. He had previously declined the command of a colored regiment raised in Louisiana; was commissioned Colonel of the 11th Regiment, C. D. A. He was taken prisoner at Winchester, Va., Sept. 19, 1864, but was released after five or six months' captivity. His last military service was performed in Georgia, and terminated April 25, 1866, when his regiment was mustered out at Fort Pulaski,—the last Connecticut regiment to be discharged. A few months later he was appointed Principal of the Conn. State Normal School, at New Britain, of which he took charge Sept. 18, 1866. The next year that school was, by a hostile legislature, suspended for one year. In 1868 he was chosen representative from the town of New Britain to the Legislature of Connecticut, in which body he was House Chairman of the Joint Standing Committee on Education. The educational legislation of that year was peculiarly important and progressive, and the chairman of the Committee took a leading part in procuring it. He succeeded in reëstablishing the State Normal School, in abolishing the odious rate-bill, thus making the schools for the first time free; and in trebling the appropriation for teachers' institutes. The same year he was elected Professor of Rhetoric and English Literature in Cornell University, and held that position two years. In 1870 he became Principal of the Adelphi Academy, of Brooklyn, N. Y., and remained there till 1875. His Inaugural Address on

Education at the Adelphi Academy was printed in pamphlet form. In 1873 was published his address on "Coëducation," at laying the corner-stone of Sage College, Cornell University. In 1874 he received the degree of Doctor of Philosophy from the Regents of the University of New York. In September, 1876, he became Head Master of the Girls' High School in Boston, Mass., where he still remains. He has prepared and delivered many public lectures; among them one on "John Milton as an Educator," two on Shakespeare, one on Oliver Goldsmith, another giving his experiences as a prisoner of war; also one entitled "Riches, and What Constitutes Them." He has published a *History of the 13th Connecticut Regiment*, and a volume of the *Masterpieces of English Literature.*

In July, 1878, he established the remarkably successful Martha's Vineyard Summer Institute, of which he was President till he resigned a short time before his departure for Europe in 1882. He has published an annotated edition of Milton's "Lycidas and Comus," and of parts of Irving's "Sketch Book." In October, 1879, he edited, for school use, the first two books of "Paradise Lost," with diagrams and copious notes. In the same year his address on Free Text-books was published by the vote of the Massachusetts Teachers' Association. In November, 1880, at the dedication of the Free Library Building in West Brookfield, Mass., he delivered an address which was published by the town in pamphlet form. In 1882 his article on Societies for the Suppression of Vice, published in EDUCATION, was similarly reprinted for circulation by the Cincinnati Society. For three years he has been President of the New England Society for the Suppresssion of Vice.

He has also found time to invent and patent a windmill, which received the first premium over several competitors at the exhibition of the Massachusetts Charitable Mechanics Association in 1881.

Mr. Sprague has delivered many Memorial-day addresses, Fourth-of-July orations; also many lectures in aid of educational, religious, and charitable enterprises. He has just been elected President of the American Institute of Instruction.

EDITORIAL NOTES.

A MOST valuable work in American history has been undertaken by Dr. Herbert B. Adams, associate professor of history in Johns Hopkins University, through the publication of a series of historical and political essays relating to municipal townships and local government in the various States of the Union. Already several interesting studies have been prepared, and a large number are under way. The plan includes the origin and development of American institutional life through every department of government, education, and philanthropy,— a veritable atlas of the inner life of the American people, showing from what sources its great streams of influence have flowed in, how every race and nationality has contributed to the present type of civilization, with the attempt to forecast the future, especially of the new South and South-west. One important result is the waking-up of an intense interest in American historical investigation among the class of forty young men now under instruction by Prof. Adams. A recent interview with this interesting group of students, representing many States, enabled us to bear testimony to the growing interest in Southern education among great numbers of our promising young men. Professor Adams has done a valuable work in the history of education by the publication of an admirable study concerning the original donation of public lands by the colonies of Virginia, New York, Massachusetts, and Connecticut to the General Government, and the dedication of these vast tracts of public domain to the new States in the interest of free labor and free schools. The same pamphlet contains papers on the real-estate transactions of Washington, and his broad views and persistent efforts in opening communication between the Atlantic seaboard and the West.

THE Rev. A. J. F. Behrends, of Providence, R. I., delivered an address before the American Institute of Instruction at Saratoga, July 13, 1882, on "Religion in Public Education," which has been re-published in pamphlet form, and deserves a wide circulation. Dr. Behrends is one of the increasing class of clerical gentlemen who seem competent to look at the vexed question of religion in public education from a human and patriotic, rather than a narrow ecclesiastical, point of view. He recognizes the inevitable conditions of the support of any system of public education that will command the permanent confidence of the American people. Such a system must be under the control of the whole people, and not of the Church, in any or all its denominations. It must recognize the fact that the American people, as a body, believe in the providential government of

Almighty God, in the morality of the New Testament and in the Holy Bible, as the great handbook of righteousness in private and public life. These convictions are a vital part of American civilization, and can no more be kept out of the school-room than the common air and light. The attempt of Bishop McQuaid and his party to break up the public school and remove the children to the charge of their ministers for education, will never meet the response of any but a small portion of the people, and even they will repudiate this scheme after fair trial, as antiquated and impracti cable. The counter proposition, represented by Mr. Robert Ingersoll, that all mention of religion, or morals as related to religion, or all use of the Bible, shall be put out of the public schools because a small minority of the people believe in neither is equally impossible, as it would establish in the school-room a dogmatism of unbelief even more intolerable than the bigotry of any priesthood. Dr. Behrends sees clearly that moral teaching and discipline in public schools is a practical thing, and when gone about in a practical way is involved in none of the insurmountable difficulties that worry the theologians. It begins in the life and example of the teachers, is materialized in the organization and discipline of the school, and goes on in the most natural and beneficent way, following the current of every-day school-life. There is no doubt that our superior public schools are one of the most powerful agencies in character-training, a most valuable ally of the family and the church, and indispensable to that discipline in public morality, so needful in our order of society. Dr. Behrends has little confidence in the proposition of certain bodies of Protestant clergymen to prepare a manual of morals for public schools. Once attempted, this would result in a multiplication of moral text-books, representing every sect of moral belief and disbelief, and "the last end would be worse than the first." The wisest thing our clergy of all denominations can do is to heartily engage in the great enterprise of building up the people's common schools, not in their professional capacity, but as citizens, with a common interest in the welfare of the Nation. Working in this way, they cannot fail to exert a most powerful influence for good, on the side of religion and morals, in the public schools. But any attempt, from any quarter, to bring public education under ecclesiastical tutelage, or to deliver it into the hands of an unreligious secularism, will react upon its movers and be rejected by that common-sense in things moral and religious which, with all their popular sins and follies, has always been and will remain the saving grace of the American people.

In a late number of the *Century* magazine, Mr. W. L. Tomlins, of Chicago, contributes a valuable article on the training of children's voices in singing and speaking. Mr. Tomlins, according to the testimony of Mr. Theodore Thomas, has made a notable success in Chicago in the very

difficult undertaking of eliminating from children's voices in singing and speaking that frightful roughness and sharpness which so often brings the recollection of the warwhoop of the savage into the drawing-room and the play-ground. By fixing a reasonable limit to the efforts of children, Mr. Tomlins, according to the highest authorities, secures an agreeable style of singing and preserves the voices from premature destruction. On one point Mr. Tomlins seems to us to have struck an idea of radical importance. Not one teacher in a thousand makes a serious attempt to suppress the the awful screeching, yelling, and "yawp" of the average child on the school play-ground. We are convinced that multitudes of children thus form a habit which impairs their voices through life. Here is a great opening for wise administration in the endeavor to train the voice in speaking in a way that will make conversation a pleasure instead of an affliction with the majority of people.

THE old State of Kentucky, just now, is moved by a great revival in behalf of universal education in public schools. An important committee of distinguished men from all parts of the State has been chosen at a recent convention, to watch the educational make-up of the coming legislature and give effect to the new school-laws indorsed by the people. This is the vital point, to-day, in educational progress in the South. A southern legislature, by the very distribution of population, is apt to be composed largely of the representatives of the people who inhabit the open country. The progressive young men are crowding the cities and towns which, in many cases, are a generation ahead of the rural districts. Thus, while the representatives of the new urban life are often among the most enlightened people, and demand measures favorable to all sorts of improvement, the average member from the country seems chiefly concerned to shield his constituency from taxation and resists every suggestion of a liberal policy in directions where it is most needed by the State. Thus, the contrast between the school-life of the growing towns and the country is simply inexplicable to any man who does not remember these facts. But every southern rural neighborhood contains a few people of large influence who can do great things in waking up their locality, and this movement in Kentucky, to enlist the most influential leaders of public opinion, in every part of the State in behalf of educational reform has a promise of great good.

FOREIGN NOTES.

GREAT BRITAIN. —*Secondary Education.*—We hear so much of the great "public schools" of England that it is difficult for us to realize that secondary education is within the reach of but a small proportion of the youth of Great Britain. The subject has received much attention from the Education Department during the past year. The Education Endowments [Scotland] Bill, which was pushed with so much energy by Mr. Mundella, will increase the means of secondary education in Scotland. The Endowments Bill went into operation Nov. 1. The circular addressed by Mr. Mundella to the Welsh Boards of Education with reference to the establishment of higher grade Board-schools has accomplished some practical results. In England, Leeds, Manchester, and Bradford have established schools of the higher grade, and the new School Board for London will doubtless proceed at once with the same work in the metropolis in accordance with a resolution that passed the late Board by a large majority.

In this connection it is interesting to observe what is being accomplished by scholarships which enable youth of exceptional ability to pass from the elementary school to some place of secondary education, and thence to the university. There are 49 such scholarships in the control of the School Board for London, 30 at the disposal of the Liverpool Board, and a less number at Manchester, Birmingham, and other towns. A single example will illustrate their importance. In 1873, Mr. Barker, a scholar in one of the schools of Marylebone, gained the Mortimer Memorial Scholarship, the first placed at the disposal of the London Board. He proceeded at once to the City of London School, where he took numerous prizes. In 1879 he gained a Foundation Scholarship as Trinity College, Cambridge, and here in 1881 he achieved the first place in the first class in the "First Classical Tripos Examination."

Training Schools for Teachers.— Among secondary schools must be classed Training Schools for Teachers. Until a recent date pupil-teachers have been trained by the head masters of the schools in which they served. Schemes for the central instruction of pupil-teachers are now being adopted in the leading cities, and the result promises to be a class of institutions resembling somewhat our normals which have a course of one or two years. Great activity is also manifested with reference to the training of teachers for secondary schools. The College of Preceptors has recently been able to increase its provision for this work through the liberality of the Stationers' Company, who have thrown open their well-known school in Fleet street, as a practice school, to a selected number of students from the College Training Class. It is hoped that other secondary schools in Lon-

don will follow the example. Finsbury Training College, for those who intend to become masters in middle and higher schools, opens Jan. 17,

Universities.—The new statutes under which Oxford and Cambridge open this year introduce organic changes. The college pays tribute to the university; the latter, in acquiring substantial revenue, acquires also substantial power. The bearing of many of the changes cannot be understood without a careful study of the statutes; the permission to marry now accorded to Fellows will transform the social life of the universities. It is reported that about 40 per cent. of the incumbents have availed themselves of the gracious privilege.

The progress of science in the universities is watched with deep interest. At Cambridge the lists of the Board of Studies for the first time include the separate Boards of Physics and Chemistry, and of Biology and Geology. A number of the Cambridge colleges offer scholarships in natural science.

At Oxford, Dr. Burden Sanderson has been elected to the new chair of Physiology on the Waynflete foundation in connection with Magdalen College. Balliol and Christ Church have offered scholarships in Natural Science for the present term. and Queen's College will follow their example in the ensuing term.

Royal University, Ireland.—Unusual interest attended the first act of conferring degrees by the Royal University of Ireland, which ceremony took place lately. This university marks an era in the history of education in Ireland. It was founded in 1879 and chartered in 1880, with power to examine for, and to confer, all such degrees as can be conferred by any other university in the United Kingdom, degrees or other distinctions in Theology excepted. No residence in any college, nor attendance at lectures in the University is obligatory, except for degrees in medicine and surgery. The University, it will be seen, removes the disabilities from which the higher education of the Roman Catholic youths of Ireland have heretofore suffered. The privileges of the University are extended to women.

Miscellaneous Notes.—The first practical result of the preliminary report of the Royal Commissioners on Technical Education promises to appear in Manchester. A deputation was sent from that city to examine into the operation of the primary schools in Paris in which manual intruction has been introduced as described by the Commissioners. The deputation has made a report to the School Board, in which they recommend that manual occupations be introduced into one or two of the Manchester schools by way of experiment. They also urge the adoption of better methods of instruction in drawing in day and evening schools. With reference to evening schools they say, "Numerically the evening classes under the Manchester School Board are much in advance of the evening classes of Paris, as compared with the population of these cities; and in all the subjects, excepting drawing, our students, as far as our own observations extended, are fully on a par with the French."

The Biological Station at Sydney has been completed, and The Royal Society of New South Wales has granted to the same the sum of £25 from its funds, which grant, it is expected, will be repeated from year to year. The Royal Society of Victoria have also promised an annual sum, and the Australian Biological Association will also probably be in a position to grant an annual sum to the Sydney Station. Further subscriptions, however, are still required, and will be thankfully received by the treasurer. The station is open to biologists of the male sex, irrespective of nationality, on payment of a small weekly sum to meet the expenses of service, etc.

At a recent council-meeting of the Royal Agricultural Society, Lord Moreton, chairman of the Education Committee, reported that nine scholarships of £20 each had been gained by pupils at Bedford, Surrey, and Devon county schools, and on the motion of his lordship it was resolved to set aside a sum of £500 for the purpose of promoting agricultural education during the ensuing year.

Captain Aylmer, M.P., has written to the Prime Minister, inclosing a memorial on the subject of a proposed Royal Commission on Irish Industries. Captain Aylmer points out that the request for the appointment of the Commission is supported by a large number of Irish members,—Liberals, Conservatives, and Home Rulers alike.

The increasing anxiety as to the physical condition of school-boys has led the Prussian Minister of Education, von Gössler, to decide upon compulsory physical training. The Minister has recently issued a circular on the subject of games for German boys, advocating, among other out-door exercises, cricket and football.

FRANCE.—*Secondary Education.*—In July, 1880, the law creating the fund for lycées and colleges was passed. Since that date the sum of 38,000,000 francs has been appropriated for these institutions, of which 10,000,000, about $1,900,000, have been exclusively for lycées for girls. The law establishing this grade of instruction for girls was passed Dec. 21, 1880, since which date 26 towns have determined to adopt the measure. Paris has not responded, but seeks to accomplish the same end by means of superior primary schools. The municipal authorities are evidently not disposed to coöperate with the General Government in the support of institutions which must be submitted to the control of the latter. The most earnest advocates of the law of 1880 desired that the lycées for girls should be placed upon the same footing as those for boys with reference to admission, length of course, and test examinations. Public sentiment does not seem to favor so radical a measure, and the "Superior Council" has issued decrees adapting the law to the prevailing demand. Instead of nine or ten years course as in the lycées for boys, five years are assigned in the case of girls, and this term is virtually shortened by the examination allowed at the end of the third year, which secures a "certificate of secondary studies." Colleges for girls have been opened at Grenoble, Auxerre, and Lons-le-Saulnier, and

lycées at Montpellier and Rouen. The three colleges numbered last July 346 scholars, and the lycée of Montpellier, 96. The lycée at Rouen was inaugurated Oct. 1, 1882. Minister Duvaux made the address. In accordance with a report by Minister Duvaux President Grévy issued a decree Oct. 10, establishing a scholastic council in each of the lycées of the Republic. This council, consisting of the chief of the institution and a representative of each of the faculties, will decide upon the courses and the conduct of the studies.

An order has been given by Bishop Dupont des Loges that once every Sunday a sermon shall be preached in German in all the churches of the Metz diocese, and that henceforth the instruction in the Metz ecclesiastical seminaries shall be in German, as well as in French.

A committee has been formed in France to erect a national monument to Rousseau, who is styled, "The immediate inspirer of the declaration of the rights of man, the proclaimer of the sovereignty of the people, and of universal suffrage, and the reformer of education in the sense of nature and of reason." Among the names on the committee are those of Carnot, Louis Blanc, and Henri Martin. The Parisian press does not heartily favor the project. Its verdict is, "No one now reads Rousseau."

Sept. 5 being the 25th anniversary of the death of the philosopher, Auguste Comte, his followers held their usual commemoration of his memory. In the afternoon a meeting was held at the former residence of Comte, where his successor, Pierre Laffitte, gave an address mainly devoted to the institution of a systematic scientific education.

Paris maintains free evening schools of two classes: (1) special art classes; (2) classes for commercial instruction. There are, at present, it is stated, about 2,000 students in each class of schools, or in all about 4,000 evening pupils out of a population of more than 2,000,000.

About forty male pupils of the Parisian public schools who have taken honors have been sent on a visit to London. The Société Nationale Francaise have made arrangements for their board and guidance. The same number of laureates were sent to central France.

GERMANY.—At the fourth Congress of German educators, the following, among other resolutions, were adopted:

The social standing of the teacher is affected unfavorably by his exclusion from the corps of inspectors, by his exceptional position with reference to the military service, and to the electoral right.

The best means for developing technical skill to the advantage of German ministries will be found in the increase of the number of professional schools properly called special schools (*Tachschulen*).

The Congress did not decide in favor of school savings-banks. Recent statistics give the number of school savings-banks in Germany as 491, having 50,381 depositors and 1,421,902 marks deposit. School savings-banks established in several villages of the Harz district have apparently

been of great advantage to the poor villagers. The number of depositors and the amounts deposited have increased from year to year. Thus in Drehsberg a bank was established Dec. 2, 1878. The number of depositors the first year was 30. In 1882 there were 43, and the total deposit was 801.20 marks.

PRUSSIA.—The Minister of Public Instruction has called attention to a law, not enforced of late, which provides that no person shall be admitted to a normal school, and later to the position of teacher, if a medical examiner pronounces him unhealthy or of small chest development. This measure has been revived on account of the great number of young men of delicate habit who seek admission to the normal schools.

A commission has been appointed at Königsberg to examine candidates for teacherships of handiwork for girls in the province of East Prussia.

The Statistical Bureau of Prussia has just published a work by M. A. Petersilie upon the status of primary schools in Prussia in 1878. In the absence of education reports, this is the latest official information upon the subject. The number of public primary schools, including 110 attached to normal schools, is stated as 33,059, with 60,307 classes. Of the whole number of schools, 23,000 consisted of a single class. The total number of teachers in the primary schools, not including those attached to the normals, was 59,493; to these must be added 27,334 assistants, of whom about 24,000 were special mistresses for needlework. The total number of children of school age was 4,272,199. Of the totals given, 3,915 schools, 20.574 principal teachers, 4,186 assistants, and 1,273,993 children of school age belong to the cities. A little computation will show that there remain for the rural districts 38,919 principal teachers and 2,998,206 children of school age, or 1 teacher to 77 children. The annual expense for primary education, as determined by calculations for three successive years, from 1876 to 1878 inclusive, is for all purposes,—teaching-force, school building, etc.,—101,016,623 marks, or $24,041,956.27. This represents a per capita expense of about 90 cents, estimated upon the population as here reported; viz., 26,647,600.

AUSTRIA.—There are in Austria, deducting the children below the legal school-age, 6,428,731 illiterates out of a population of 38,000,000. Of the number of illiterates, 3,461,170 are women. In the province of Bohemia the illiterates number 151,905 men, 248,487 women. For the scholastic year 1881, Bohemia counted 4,383 popular schools having 10,021 classes, and 126 burgher schools with 509 classes. The teaching force for all these schools numbered 12,999 persons and the pupils 901,377, of whom 115,519 received their instruction gratuitously. A committee of teachers has been formed at Gratz to arrange plans for a permanent school exposition.

A report bearing date 1882, presented recently to the Upper House, gives the total number of teachers in the diverse provinces of the monarchy as

31,817, of whom 26,413 are men, and 5,404, women. The eighth general Congress of Austrian teachers was held from the 3d to the 5th of August at Reichenberg in Bohemia. At the session of the Congress an association of the editors of pedagogic journals in Austria was formed upon the model of that which exists in Germany. Four journals joined the Association. The program adopted comprises the following points: Advocating eight years' obligatory instruction; abolition of local inspection; inspection proper confided to men especially qualified for the service; abolition of secret reports; abolition of the imperial depot of school-books; reform of the censorship of school-books; creation of school-gardens.

RUSSIA.—The *Official Messenger* of St. Petersburg announces that, "by order of the Emperor, the admission of new pupils to the course of medical training for women at the Nicholas Military Hospital will be discontinued after the present term. The students will be allowed to conclude their course, after which the clinical instruction for women at the hospital will be abolished." The Medical Academy for Women, the courses of which were quite equal to those of the old Universities, had 367 students. Since 1877, when the first lady students passed examinations, 281 ladies have completed the whole course of studies, and 152 had passed the examinations of M D.; 105 of them were in service at universities and in public hospitals.

SWITZERLAND.—Preparations are being made for a complete exhibition of the educational system of Switzerland in the exposition to be held at Zurich this year. One of the most interesting features of the exhibition will be furnished by the various industrial schools. In Berne, under the present law, handwork and industrial schools may be established by private individuals, societies, or communities. In 1880 there were in the canton 11 such schools, numbering about 450 scholars. They received government aid to the amount of 4000 francs (about $772). A late number of EDUCATION contained a brief account of the action with reference to the office of Secretary of Public Instruction. Advices since received at the Bureau of Education, inform us of the success of the endeavor to submit the decision of the councils to the *referendum* (popular vote). The minimum of signatures required by the Constitution is 30,000, and above 100,000 have already been secured. The educational condition of certain cantons would seem to be a sufficient reason for continuing upon the present basis which secures to each canton entire independence in matters of education. Thus Geneva has ample provision for free primary instruction, admirable secondary schools for both sexes, at which the fees are small, a gymnasium, a normal school, a well-equipped university, and schools of horology, design, bronze work, and chemistry, all maintained by the canton and city without help from the confederation. Geneva spends between $200,000 and 300,000 annually for public education.